ADVENTURES OF FUTURE SCIENCE

May

WONDER Stories

HUGO GERNSBACK
Editor

A GERNSBACK PUBLICATION

"THE MOON MISTRESS"
by Raymond Gallun

"BROOD OF HELIOS"
By John Bertin

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ON THE COVER

this month, from Raymond Gallun's "The Moon Mistress," we see the imprisoned explorers waiting for their doom as the metal hand of the Insect God is about to open the trap to admit to their glass cage the hordes of hungry insects. On the right are the worshippers of the Insect God, slaves of the "Moon Mistress."

NEXT MONTH

"THE INVISIBLE CITY"
by Clark Ashton Smith

Clark Ashton Smith is a past master in the art of showing up our human limitations. By putting us in comparison with other forms of life, he pictures very vividly that our proud race is but a fumbling, stumbling type of semi-intelligent animal. And even as animals we lack many of the qualities possessed by other forms such as keen senses of sight, hearing, smell, touch.

In this story Mr. Smith again throws our explorers forcibly into the arms of a strange but believable form of life. There is nothing bizarre or impossible in the experiences they pass through. And if many people think that these experiences are those in a dream, we have the authority of the eminent scientist, Sir James Jeans, who tells us that our own science is really dreamlike.

"THE HELL PLANET"
by Leslie F. Stone

Many amateur authors have pictured man going from one world to another and quite facilely adapting themselves to entirely new conditions. These authors blithely feel that men could live anywhere; if there were only food of a kind and breathable air. Miss Stone takes an entirely different view of that. She believes we should look on the interplanetary question realistically and realize that exploration in another world may be fraught with the most terrific dangers.

And then she asks in this story, "Why should we go to another world?" Is it, as she says, "Man's damnable desire to conquer, to nose in where he doesn't belong . . . ." This stirring tale gives in no uncertain terms the author's feelings on the matter.

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PLEASE TURN TO PAGE 1381

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1932

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WONDERS OF ATOMIC POWER

By HUGO GERNSBACK

ONE of our readers recently sent in an interesting letter, which is reprinted herewith:

"In your magazine WONDER STORIES, as well as in other magazines of science fiction, stories often appear in which the characters use and are familiar with atomic-energy motors which supply power at no expense and need practically no upkeep or repair. And also there are other types of motors utilizing sunlight, wireless power transmission, etc. The authors of these stories, however, never seem to consider the effect of such an invention upon some of the major industries of the world; yet this is a serious problem.

"Let us imagine that a scientist invents a device which, without the use of power from any other outside source, can extract tremendous energy from the atoms. He forms a corporation and introduces the device which, let us say, is simple and rugged in construction, of small size and weight, and reasonable in price. The invention can be used in automobiles, airplanes, ships, homes, factories, etc. What would be the reaction of the world?

"Would such an invention tend to lower American standards of living through wage reductions, etc., and would it threaten American industrial supremacy?

"Would the introduction and sale of such motors result in a world-wide industrial upheaval and immediate replacement of steam and gasoline power or would the change come about slowly.

Emmet R. Rhodes,
Oakland, Calif."

It may be said in answer to this thought-provoking letter that scientists to-day are pretty much divided on the idea of atomic power itself. It is believed by some that there is in the atom a latent power that may at some future date be released; while the other side strongly questions its existence, or at least doubts that it can ever be utilized.

Personally, we believe that there is a vast inherent power locked up in the atom. Some years ago, a well-known authority in calculating this atomic power came to the conclusion that the energy now confined in the copper of a single one-cent piece would be sufficient to drive a passenger train from New York to Chicago and back. The element radium shows with seeming conclusiveness that there is energy locked up in the atom. Radium gives off a tremendous amount of power during its life. But its life is so long that in 1700 years only half of it has disappeared—changed into lead. In this transformation, a single ounce of radium would give off 1,720,000,000,000 horsepower seconds during 1700 years.

Of course, the catch is that we cannot utilize the power at once. There is no key, as yet, whereby we can take radium and make it give up its energy in say ten hours or ten days. And waiting 1700 years for the power to come out is, of course, not very practical. Now then, some scientists contend that all matter contains in itself dormant energy although we have no key to release it.

Hand a savage a stick of dynamite and he will not know how to utilize its tremendous power. He can hammer it, cut it; he can even burn it, without being aware of its *inherent power*. The key in this instance—the fulminate-of-mercury explosive cap—is unknown to the savage, and he, therefore, cannot unlock the dynamite's energy.

Our own case is similar to this, when we pick up a stone or a piece of metal which has vast power potentialities within itself. We have, as yet, no key for the unlocking process.

On the other hand it is possible that, in time to come, when we know more about the structure of the atom, the electron,—not to forget the recently discovered *neutron*,—we may be in a better position to do something. This may be a hundred years from now or it may be ten thousand years; no one today can possibly predict the time.

But suppose it does happen; and suppose we do release the atom's power and unlock this new Titanic source of energy? The chances are overwhelming that, even if we do find the key, we will not get this power for "nothing." It probably will cost energy or effort to get atomic power, just as you cannot get dynamite for nothing; and even if you do get it, it may not always be what you want. The stored energy in dynamite and nitro-glycerine is tremendous. We can use dynamite or nitro-glycerine for blasting purposes, where an instantaneous application of energy is required, but even today, 50 to 75 years after the invention of these explosives, *we have, as yet, not tamed the energy*, and we cannot, as yet, make a dynamite or nitro-glycerine motor. It is one thing to have the energy; but quite another matter to use it in the way you desire.

We need not go to the explosives, nor for that matter atomic energy, but take such stupendous and inexhaustible forces in nature as the tides, solar heat, and many others, which are continually manifest all about us. Yet, all of these practically go to waste today because we have not been able to harness their energy.

BROOD OF HELIOS

By **John Bertin**

(Illustration by Paul)

The night was alive with a stirring, quick-moving horde. Gregory was some twenty yards away, heading for the smoke-fringed ship.

BROOD OF HELIOS

IT was the sound of water, a low roaring rush of water, that filtered into the stirring senses of Dr. George R. Meredith. His awakening was quite natural, the sort of reanimation that comes to a healthy animal after deep sleep, and was of itself a somewhat new experience. George R. Meredith was a man of mind and reputation rather than vigor. He moved around, groping, conscious of someone moving beside him, of a voice calling, "Uncle George!" The sound of that voice and name pieced things together in Meredith's mind.

"Ruth!" he muttered, instinctively fumbling for his glasses, always worn attached to his laboratory robe by a black silk band. His fingers found the band, and followed it to the horn-framed lenses. Relief came to him at the familiar touch, for it seemed suddenly to Meredith that he was in an alien world. There were strange glows of light about—a bulk of earth rose above him as he sat up on a pebble-strewn floor.

The first object he saw clearly after adjusting the glasses was James Gregory. Gregory's face was distorted by mixed dread and wonder.

"For the love of Heaven, Meredith what's happened?" Gregory's voice was strained. He stood upright, a tall young man with widened eyes staring out of a pallid countenance. Beside him Ruth Meredith was groping to her feet, up the sides of a landslide of fresh earth and rocks. Seated, Dr. George Meredith stared, his mind refusing to grasp what he saw. Beyond Gregory, to the left, another man was moving, on the ground or floor. He was dragging himself free of the loose earth and stone. There was the faint smell of dust in the air and, above all, the watery, incessant roar. Glows of a fantastic light, mingled crimson and blue, illumined the surroundings.

JOHN BERTIN

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Suppose some unknown calamity were to occur, and our characters awakened to find themselves in a new world; or in a different age . . . alone . . . facing unknown terrors and dangers. Would they survive the terrible battle with nature? Or go under, as unfit?

This story answers these questions by a series of amazing adventures, woven into a colorful and exciting story.

Ruth Meredith looked up the incline of loose earth . . . up, up, a monster slope that seemed to run to a murky sky. She twisted around, nearly losing her footing, a trim figure in long blue gown, black velveteen blouse, and sleeve gloves setting off rounded arms. A Princess Eugénie hat, its cocky feather going back over one hidden ear, finished the metropolitan ensemble, curiously misfit as the bewildered girl stood ankle deep in the debris of the vast slope. Something like terror was in her blue eyes. "Uncle!" she whispered her alarm, stepping out of the rubble and going to Meredith.

"Here, give me a hand, will you?" the man to the left of James Gregory called, and in a dazed obedience Gregory reached over and helped the other extricate himself from the pile of earth. Dust floated up in added volume to the jagged break in a roofing above them and, caught in an air current going up to the vast slope, it swirled and eddied in the strange commingling of blue and crimson light.

"God!" whispered Dr. George Meredith. A hand seemed clutched about his throat, the grip of a great dread.

Five minutes before, there had been no dust, no earth slope running to that incredible height, and the sound of Manhattan's bustle had come into the laboratory in dulled, softened monotone. Meredith's mind reconstructed the immediate past—he had just introduced Alan Deneen to Ruth and Gregory, and then pointed to the aluminum test table upon which was to be demonstrated the greatest achievement of man. The morning's papers would be full of it. And now there was no table—yes, there was a corner of it, protruding out of the earth.

Meredith scrambled to his feet, conscious of his niece's gripping fingers. The girl was afraid . . . Gregory was afraid . . . he was himself chilled by the strangeness of things around him. It was a dream sharp-etched as life, or life as fantastic as a dream. Meredith's mind worked in a sort of daze.

Young Deneen, shaking dirt from his trousers, seemed the calmest of all. Deneen had the natural mental resilience of the athlete for the unexpected, thought Meredith, and with this exercise of judgment he roused himself. Pushing the girl aside he called to his male companions.

"Here, get up there. See what's happened. You, Alan." As they boosted Deneen up the slope of earth till his fingers gripped the broken roofing, Meredith wondered if he were mad, living in some world without proportion

or sequence. How had a mountain of earth and rocks appeared in New York City? And what had become of the forty stories above them?

Deneen's weight, eased for a moment as he gripped the ceiling, jolted back on the two men as his support crackled. Meredith's slim arms gave way and the three fell together on the soft slope. The girl did not move. There was a sort of horror in her blue eyes.

Deneen rolled over and rose, helping the other two to their feet. His slightly rugged features that normally had a reckless cast, were now set firmly. He ran a hand through tawny hair. "Professor Meredith," he said a bit thickly, "maybe *I'm* crazy. But take a look yourself. There's no New York out there!"

Ruth Meredith screamed. It was a short, sharp sound, cut off by her own gloved hand pressed to faintly-rouged, well-curved lips. She stood looking past her uncle at the pile of earth. It quivered in one place, heaved, subsided, and heaved again.

"The cat," said Deneen cooly, and reached swiftly over, scooping handfuls of the loose soil. A quick agitation of the dust, and a spitting, snarling, furry shape sprang out. The girl's white teeth bit into her fingers. Gregory was staring at the broken ceiling. "No New York! You're mad, Deneen!"

"Wait!" said Professor Meredith, his will steadying his voice. He had picked up a piece of the ceiling which had given way beneath Deneen's weight, and was studying it. "Just a minute, James."

THEY watched him across the little square room into the side of which a mountain had crashed. Meredith placed one hand against a blank wall and pushed. It gave in, a large rectangular section breaking free from thin wooden lathings behind. The result was a large opening giving view of an expanse of earth beyond. Earth covered with immense, vinelike trunks running into a tangle of ebony leaves where the slope dipped to a gorge. The frightened cat jumped through the hole and made away down the incline.

Meredith stared for a moment. Then he faced around. His eyes held a queer, growing excitement, something transcending his bodily dread. He brought back a jagged piece of the wall to Deneen. The girl Ruth made an effort to conquer her terror. She stepped forward. "What on earth is it, Uncle? What is it? Where are we?"

"This room," said Meredith, trying to speak calmly, "was framed around by wood and backed by tiling. Its ceiling was plastered. Now there is left exactly that wooden framework and the plaster. You understand, Alan? I wrote you about the crystallizing rays affecting merely one molecular arrangement. This shell of wood around and below, and plaster above, was absolutely sealed in. The thin lathings of wood felt the atomic freeze-up, but it could not have penetrated to the tile. All the backing around the walls, above the ceiling, has disappeared!"

"But—" James Gregory paused. "But this is madness! Behind us was the Worth Building, a block of it, and above us were forty stories of steel and concrete."

"Exactly," said Meredith a bit hoarsely. "They're gone. You've seen, Deneen. New York is gone!"

"But *how* . . . how?" The girl Ruth had found her voice. She stood very straight as if bracing herself against an inner weakness. Deneen slowly approached the hole in the wall and looked out. Looked at a crouched cat just beyond, where it had stopped in its run and was huddled on the brown earth, its hair raised along its back, snarling as it gazed from side to side as if menaced by a host of enemies. Deneen stepped out.

"Don't you see what's happened?" Meredith asked the others, his eyes unnaturally bright. "Something happened to that time switch while we were talking about publicly demonstrating our experiment on Deneen. The currents were set on and we lost consciousness at once. We awaken without any sense of time interval. But who knows how long a time has elapsed? The circuit was in the tubes themselves. Still . . ." he trailed off doubtfully, looking up the slope and listening to the watery roar.

"But that is nonsense!" protested James Gregory. "How does *this* get here?" he pointed to the earth pile. "How was the laboratory dug out of the Worth Building and transported to . . . to the Adirondacks . . . no, the Rockies? There are no mountains east of the Mississippi as high as *that*," he jerked one arm toward the slope of earth.

Ruth Meredith stared at her scientist uncle, the horror growing in her eyes. Gregory lifted a well-tailored arm. The fingers of his hand went to the collaring of a stiffly-starched shirt and automatically rearranged a dress tie. He had been taking Ruth to dinner at the Palais D'Or. The man's face was a bit grey in the strange light. "This . . . this is a nightmare, Meredith," he muttered. "It can't be real!"

Meredith moved to the corner of the laboratory, crossing over the earth mound. Conical tubes like expanded thermos bottles were arrayed in a row, clasped and spaced in position by a steel collaring. The arrangement ran under the mound of earth.

As far as Meredith's memory served, it was just a half-hour before that he had stood with Deneen outside the laboratory in a tiled hallway, working on a switch and looking through thick glass at a cat drinking milk out of a saucer placed on an aluminum table in the center of the room. Meredith had directed Deneen's attention to the conical tubes which glowed with greenish light as he worked the switch. And, as if by the working of some uncanny magic, the cat on the table would freeze instantly when the greenish glow would appear in the tubes, freeze with tongue out, with head lifted or dropped—in various positions exactly as a motion picture crystallizes when the film is stopped before the eye of the projector.

Dr. George Meredith had felt a bit awed and a bit arrogant at the result of ten years of labor. He had, with the help of the Worth finances, wrested from Nature a secret of tremendous importance. And now he stood staring at a queer wreckage of his achievement, an unbelievable jumble of things that made no sense. He wet his lips with his tongue. He was scientist from head to foot, in every fibre of his body, but thoughts of Eddington and Millikan, who had run to the edge of abstract science and found mystery, came to his mind. Perhaps it was not well for men to meddle with the fundamentals of Nature—he shook his head mentally. There was an explanation for the weird circumstances about them—a scientific explanation.

"I tell you," he said hurriedly, "that is a point to remember. Much time may have elapsed while we four and the cat were in a state of suspended animation. Remember that no matter how long the interval, we would awaken

exactly as at the moment of transition—our clothes, everything in this room. The rays could not penetrate beyond the shell, but they would affect every detail in the interior."

"But, Uncle, what about the city, the building?". Ruth Meredith was calmer now. "They would have entered the laboratory . . . the janitor . . . the reporters due to arrive even while we were there . . . the police . . . Oh, everything!"

Meredith shook his head.

"FRANKLY, Ruth—this is beyond me. This light—noise—place. Don't you feel strangely? Exhilarated physically? Yet—why I suggested the possibility of the building having decayed around us, rests on the fact that the crystallizing of atomic systems by the Meredith method makes any substance phenomenally rigid—adamant." He looked at his niece—walked over to her. "We must remember that neither the janitor nor the reporters nor the police could gain access to this place."

Meredith was very calm now. "The heaviest charge of T. N. T. would not mar the surface of this quarter-inch shell of wood and plaster, once the electron whirl was stilled." He looked aside at Deneen who was entering through the break in the wall. The Harvard football ace slowly stood upright, listening.

"Yes," said Meredith, in full control of himself now. "No power of man could gain access to us, and it may well be that they blasted the Worth Building down around us—perhaps twenty or forty years have elapsed and, in the process of reconstruction which goes on in every city, the skyscraper was torn down, and the strange tomb—for they would believe us dead—the strange, unbreakable tomb would be removed. There was only Hitchcock who knew of my labors from the professional standpoint of technical clues, and he evidently failed to find—"

"But Dr. Meredith," protested James Gregory irritably. "Twenty or forty years! That is impossible!"

"No more than the circumstances around us, Jimmy," said Ruth, her voice low. "Either Uncle is right, or we are mad!"

"That is the only explanation," said Meredith, as if trying to convince himself. "We must prepare for the shock of finding relatives and old friends dead and everything changed."

Deneen moved forward. His face was strangely set.

"Guess you will find things changed," he interrupted. "This is no Rip Van Winkle case, Professor!"

"What do you mean?" Meredith sensed the other's tenseness.

"Perhaps your niece is right. We're all mad. Anyway, it's my opinion we'll never see New York again. Whatever moved us did a good job."

"What is it, Deneen?" snapped Gregory, his nerves raw.

"We're not on the planet Earth at all, if I remember my old sky." Deneen shook his head. "Wait a minute. It's useless to argue. Step out and see for yourselves."

Meredith followed him out. The girl and Gregory crowded the little man of science as he stepped through the break in the wall. They were hardly out when Ruth Meredith gasped.

Deneen was pointing upward. Gregory muttered. Meredith stared.

Slowly the four humans moved down the incline, heads upturned to a sight never before given to earthly eyes. For two suns hung in the murky sky.

CHAPTER II

An Alien World

THEN, as their first horror passed, back of the four puny figures on the slope sounded an ominous rustling, growing to a deep, thunderous growl, dwarfing the roar of waters. Meredith whirled. "The mountain!" he yelled. "Landslide! Deneen!"

Deneen began to run toward the laboratory but stopped and watched as the frail structure lurched and collapsed like a paper house as countless tons of earth and stone shifted over it. The movement of the vast slope as a whole was small, scarcely perceptible to the eyes. The growling ceased and again the rush of waters blurred the silence.

James Gregory muttered again. "God!" he breathed, a wildness in his eyes as he looked over an incredible landscape. "This can't be! It can't be!"

They were up on the brow of some vast upheaval To the left the earth dropped down in gigantic steps—gorges, peaks, pinnacles—a confusion which lost itself in a haze of the strange-colored atmosphere. Glints of crimson and blue came up from a torrent that spilled itself in a long plunge off a ledge not a hundred yards away. To the right and rear, view was cut off by the upthrust of stone and soil that had now engulfed the laboratory. Everywhere were the monster vines, sprouting black foliage.

Directly above was a luminary large as the sun they had known when it sank beyond the Palisades by the Hudson, and of a deeper red. Over the long gorges and drops to the left, half-way up the arc of sky, hung the second orb. There was no mistaking it for any earthly phenomenon. It was a brilliant, blinding blue, though apparently much smaller than the sun directly overhead.

"Well, Dr. Meredith," said Deneen after a quick look at the white-faced girl. "The removal theory simply does not fit—unless they moved us to another planet. Or into the fourth dimension." He watched the cat. It had ceased its silent snarling, and was crowding the girl's legs in evident fear.

The professor made a strange picture in his black robe, nose wrinkled a bit under his glasses. Deneen could see the struggle Meredith was making with very unscientific reactions. The laboratory was completely buried. There was not a thing in that vast tumbled world, or in the weird sky, with familiar aspect.

"My boy," said Meredith after a time, "I don't understand. The fourth dimension—that's theory—a mathematical exercise—I feel my weight, my physical properties—I know myself as exactly the same George Meredith. Between us there is space, our old familiar space, and we move in the modes of our own dimension. But—" he peered around. "They did not move us to any planet in the solar system, Alan. That is the mystery and the miracle. We are not merely off the earth, but away from the sun. Our sun!" he said, his voice breaking a bit. "Gone!"

Ruth Meredith roused herself. Gregory's pale, strained expression was no help to her. She ran sobbing to her uncle. Deneen walked away. He moved over to one of

the great vinelike trunks and passed his hand over the smooth surface.

"Uncle," the girl cried. "What are we to do? How can we live—here? Live until we get to some understanding—some means—" she suddenly gave way and cried, face buried on Meredith's shoulder. "I can't look!" she sobbed. "I can't. It's all too—too terrible!"

Deneen came back to the group. "Suppose we try to get to that laboratory?" he asked. "There are some parts of our world there, anyway. Metal—wood. Those trees are queer stuff." He watched the girl's heaving shoulders

Meredith called to Gregory. "Here, take Ruth. Come on, Alan."

But the laboratory could not be reached. They dug futilely into the earth, removing boulders and cracked sections of rock. Meredith pawed over the material. He finally desisted.

"It won't pay us for our labor, Alan," he decided. "There was nothing there but that aluminum table. The ray tubes will be broken and utterly valueless to us. The time switch and the electrical connections to start and stop the ray generators were caught in the first landslide, and will take days to reach. This slope may shift again at any moment. The original fall has made it unstable."

Deneen, kneeling in the loose soil, reached up and removed his necktie and soft detachable collar. He stripped off the coat of the gray suit he wore, watching Gregory and the girl as the act turned him half around. Gregory was kicking the frightened cat away from Ruth's feet. Deneen watched the feline slink toward the vine-trees.

"We've got to keep stiff about this," he muttered, turning. "It's hard on her, Meredith. Whew, it's hot!" he added, deliberately shifting to his matter-of-fact slang.

Meredith nodded and forced himself to think. He poured dirt from one hand to another. "Proof of one thing, anyway. The universe is made of identical stuff. Rocks and earth, Alan." He shook his head, weighing a stone. "Granite," he muttered. "Same weight." His voice perked up. "Do you realize, Deneen, we weigh exactly—"

A SCREAM cut him off—Ruth's voice, high-pitched in terror. Deneen whirled. The girl and her friend—the man in evening clothes and the girl in her modish gown—had been standing close together some ten yards down the slope, watching the two men labor in the loose earth. They were now stumbling backward, plainly half numbed with terror, facing the other way.

On the edge of the incline, where it dropped to a hollow filled with the ebony fruitage of the great trunks, had appeared an evil apparition—something that moved in jerks and darts of amazing speed, the size of a pig, covered with protuberances of bone or horn. It was cornering Meredith's cat. The cat's twisting dodges, made with the energy of terror, were slow compared to the motions of that weird preying thing. The little feline stood on its haunches and slashed with its armed claws at a fanged face that snapped down upon it. There was a scuffle, a sound of a thin, high snarling.

Deneen's groping right hand closed over a rock. His torso pivoted around and down to the throwing snap of his arm. The stone struck the thing fairly in the snout as it muzzled over the savagely battling cat. The force of the blow bowled it completely over. It jerked erect on short legs, darted here and there as if bewildered, and vanished over the dip edge. Its thin, high snarl echoed in the air, blending with the steady roar of the falling stream.

Gregory's face was now ghastly. He stumbled on the edges of the loose earth. The girl was calmer. Her wide eyes left the limping cat and went to Deneen. Meredith had not seen clearly. "What was it?" he asked. "What was it like?"

"Like the devil himself!" muttered Gregory, his head moving from side to side. Deneen watched him, then the girl, and finally the squinting Meredith. "Suppose we get out of here?" he suggested tersely. "We'd have to think a long time before explaining two suns in the sky, trees like that, and this knobby fellow. Too long a time. This slope may slide down at any moment." He watched Gregory. "You'll take care of the girl? It'll be hard going."

The son of Dwight Gregory, resident of a vanished Park Avenue, nodded mechanically. Plainly, his mind was numb. Deneen voiced a warning. "Stop thinking about this business. We can breathe, anyway. Let's get out of here. We'll stop somewhere out of danger of that landslide and try to plan our moves. Pick up a rock, a good solid one, and let any of those knobby fellows have it, if they pop up."

As the party started to move he added to Meredith, "That beast was too big to be thrown over the way it was. The stone seemed to lift it off its feet. Another thing—it couldn't hold the cat down. But *move*—boy—it was moving!" He turned off toward the limping cat.

Meredith called querulously, "Don't get too far from us, Alan!" The girl asked Deneen to come back. All three paused, huddled together, while Deneen, his gray eyes coldly watching the surroundings, stooped over and picked up the wounded cat from the ground. It mewed harshly, all its fur ruffled with dread. One foreleg was badly slashed but it was plainly not fatally hurt. His wary gaze shifting over the ground, Deneen retreated to his companions.

"I've done a bit of hunting," he said. "Canada. Motion picture expedition. A carnivore as big as that, say a puma, would have broken this tabby's back with one bite. This thing's head couldn't hold the cat down. I saw that plainly. What would you make of that, Professor Meredith? Weakness and speed combined?"

"Light weight," said Meredith thoughtfully. "Here, let me carry that cat. You hold onto me, Deneen. I can't see very well in this confounded light. Yes, light weight," he continued. "Remember, from all appearances and incredible as it sounds, we are not on earth—not even in the solar system. Life here may have developed in forms less solid and more agile."

Deneen helped the professor around one of the monster vine trunks. "This way," he called. "Stay close to me."

They did. Even Meredith moved by instinct, his rational faculties numbed by the weight of the problem thrust upon them. And instinct called clearly to obey Deneen, to stay with him. The girl edged closer to the coatless young man, her wide eyes on broad shoulders, the firm set of jaws.

James Gregory noticed and muttered a reassuring remark. After a time he stripped off the black dress coat,

ripped with nervous fingers at his collaring. Satiny cloth, glinting in the queer light, and the grey bundle of Deneen's jacket farther up the slope were the only traces they left behind. Slowly, laboriously, they descended, picking the easiest paths. The roar of waters gradually dimmed.

ALL four had watches, apparently beating normal time. It had been seven o'clock in the evening of an early September day when Ruth and her escort, dinner-bound, had dropped in on Meredith. The girl remembered Broadway at Times Square, where Gregory had stopped to purchase some trifle in a drug store—the eddies of people—the cars—the running band of lights flashing news, news of the world they knew.

It had been seven o'clock. It was now half past eight on the girl's wrist-watch, an hour and a half later. She looked at the little dialed face and cried. The black gloves and the velveteen blouse had been removed, and the Princess Eugénie hat. But she clung to them as if they represented things of immense value. Her forehead was damp with perspiration under a mass of auburn hair, still bravely curled. Beside her moved James Gregory, the first shock of fear gone and replaced by a chronic alarm which kept his head twisting from side to side.

The air was stifling—humid—a heavy air. Yet they bore the unaccustomed fatigue well. Even the slim professor, holding to Deneen's brawny shoulder, had voiced no desire to rest.

"I tell you, Alan," the girl heard him say, "there's something in this atmosphere, some stimulant. Don't you feel it?"

"Yes," replied Deneen shortly. "Looks as if the vegetation feels it too. Look down below." They were threading a way aslant the mountain, ant-like figures on a vast slope. Below them the gorges were choked by growing things, ebony and scarlet, a dense mantle holding slashes of pale, unearthly green. It was Ruth who first noticed that in certain places on the mountain the great boles of the vine trunks grew upright like trees, their ebony crown of leaves hanging limply about them.

"Perhaps," muttered Meredith, "there are strong winds in this world. In exposed places those peculiar growths are flattened to earth. This atmosphere"—he peered up at the murky sky holding two luminaries—"seem akin to that primordial, violently agitated one which covered the earth in early geologic times."

"There's no wind now," commented Deneen, pausing to help Gregory get the girl over a break in the ground. She took his extended hand and came up. Her eyes tried to smile at him. He could see faint blue marks on her cheeks where the perspiration had streaked from some lash tint. The rouge on her lips was still intact, delicately applied, and Deneen suddenly understood the horror back of the smile in her eyes.

This girl had fitted into a world—perfectly fitted—and by some unexplainable means appeared in another. Holding her slim waist and looking closely at her, Deneen did not himself believe it all. But his gaze lifted to the mountain bulk behind her, swept over the strange trees, shrank from the blinding glare of the little blue sun.

"Buck up!" he muttered a bit hoarsely. "Keep noticing things like those trees growing straight here, flat there. Keep your mind off the riddle. Atta girl!" as she smiled again.

Gregory climbed out of the break and reaching them, put his arm around Ruth. Deneen went back to Meredith.

"Say," he told the scientist. "Do you realize we've been following something like a trail across this mountain? Maybe there are lots of these knobby fellows."

"Perhaps this—this world is inhabited!" suggested Ruth. They gathered in a group. Meredith adjusted his glasses, and shifted the cat to a more comfortable position in the crook of his left arm.

"You mean by men or creatures like men?" he asked, and shook his head. "That's very unlikely. Only extravagant thinkers, my dear, dwell on the possibility of thousands and millions of habitable worlds in the universe. Do not forget evolution. Evolution is the result of a tremendously complex series of events the lack of which—"

"But we *can't* be off the earth!" the girl cried. "We *can't!*"

"What's that?" said Deneen sharply, his head erect, rigid. "Listen!"

A noise was in the distance, a combination of shriek and drone, growing in the sky. "Look!" breathed Ruth, pointing. Out of the murk ahead, half-way between the red sun and the farther horizon, shot a long, silvery cylinder plumed at its rear by jets of smoke. It crossed their line of sight at a speed which turned the watchers' heads evenly around as they followed it. Splitting the dense atmosphere by the mountain shoulder it was gone. The shrieking drone died away.

"Well," said Deneen very slowly. "Your evolutionary argument may be well thought out, Meredith. But the opposition wins. That was a man-made flying boat—brains went into the making of it, anyway. And brains used better than they are generally used."

Meredith stood staring upward.

"Goddard's rocket ship perfected!" he muttered. "Intelligence!" A great light grew on his damp face. "Intelligent beings, my boy! What an amazing thing!" he marveled, the light of relief strong in his eyes. "And what a welcome one! I was fighting the thought that we were alone, victims of some monstrous cosmic joke—alone in some order of existence totally alien to ours!"

"Well," said Deneen, "we can't start a celebration—yet. That ship's gone. It travels faster in five minutes than we can in a week. And intelligence is not always connected with brotherly love, not even in our own world."

"But, you mean—" Gregory pushed forward. "What do you mean, Deneen?"

Ruth watched Deneen shake his head. "I don't know," he answered. "Just a hunch. Anyway—we can't expect to find help before solving two problems." He looked at the girl, hesitated, then voiced his thoughts. "One is food. I'm hungry. Hungrier than I should be. The other is—night. Notice those suns? They move lots faster than old Helios did."

"This globe is spinning faster!" said Meredith, the shades of doubt again on his face. "For a moment after seeing that ship, I thought—" he squinted at the great red orb above, and his voice trailed off.

James Gregory moistened his dry lips. "Night!" the girl beside him said slowly, fear-filled eyes on the strange, monstrous jungles below.

CHAPTER III

Strange Perils

THEY made little progress after that. The heat grew unbearable as the smaller blue sun came to zenith, and the red one hung, a gigantic ball in the horizon mists. Ruth, trying hard to follow Deneen's advice, and concentrate on their surroundings, called attention to the first sunset. "That direction we will call west," she tried to make talk. "Because the suns go down there."

Wearily now, she sank down. "I want to rest." Her wrist-watch marked ten o'clock. She made a pitiful figure, squatted on the brown earth, one arm crooked around the velveteen blouse and feathered hat. The gloves had been dropped farther up the mountain. Gregory slumped down beside her, running his hands through his hair. The combing gloss was nearly gone from his head. His appearance was disheveled. Meredith, a slight figure, still wore the black laboratory robe. He was reluctant to part with it, finally consenting when Deneen urged. The cat, placed down, walked painfully, its crippled foreleg held with stiff delicacy from the ground.

Deneen explored a mass of growth off the side of the path. He crashed about, drawing anxious glances from Gregory and the girl. Meredith watched the setting sun. He finally moved to a boulder imbedded in the soil some distance from Ruth and her friend and studied it, his head shaking. He picked smaller stones from around his feet and balanced them carefully in his hands. A deeply puzzled expression grew on his keen features, for a time replacing the look of instinctive dread. The girl wearily moved her head.

"The heat—it's terrible! I can't bear it, Jimmy!" She turned impulsively to Gregory who cursed dully as he held her crying in his arms. Deneen came back and watched the two. After a time he said, "Suppose we get under cover? We can fix some sort of roof over us. The wood here is soft, and I've got a jack-knife."

Gregory tried to help. But his mind could not concentrate on even the simplest tasks. The feel of soft, light branches that bent with flexibility, plainly unnerved him. Deneen wondered if the human mind and spirit, adjusted to a certain world, could function in any other. But he himself seemed to be in full control of his faculties; and the girl, rousing herself and coming to join them, began to interlace cut branches into the bigger roof supports of the rude shelter with every appearance of normal intelligence.

As they labored in the tangle of strange bushes, Deneen came to the unpleasant conclusion that Gregory's main lack was courage. He shook the feeling off. It was just a momentary thing. "Look!" Ruth was saying, the stimulus of their activity beginning to dissipate the expression of horror on her features. "Flowers! How beautiful!"

"No time to admire," said Deneen, as if they were calmly conversing in a botanical garden. His shoulder brushed hers as he cut with swift, strong strokes at inch-thick tendrils that bore crimson, cuplike petals at their extremities.

The tangle of growth went on down the slope. Deneen laced it into a sort of barricade. The other way opened to the mountain trail; and the rough shape of a shelter began to form. Meredith still puttered around the rocks outside, his shirt sticky with perspiration. The girl called to him. "Come into the shade, Uncle. Please!"

Meredith picked up the robe he had discarded and joined them. The cat stood on the faint path licking its wounded leg.

"We might have found as good shade farther down," explained Deneen, "but the heat keeps increasing as we descend. Mostly, however, I wanted to work. I feel better. We've built something. Things can be shaped, fashioned, in this world. We have a fighting chance." He looked at Gregory. "Just don't bother wondering *how*. That way," he gazed through the growth-lacing to the vast globe on the horizon, "that way lies madness. Out of the solar system!" He shook his head. "We must forget and take things as they are till we get some background behind us—find somebody, perhaps. Our first problem is food."

A low muttering growl came on the heels of his words. Meredith, paused in the doorway, looked up to the sky. "Thunder," he said succintly. The growl came again, grew to longer rolls and mutterings, unmistakably thunder in the distance. Deneen, peering through the lacery of bushes to the setting sun, saw streaks of cloud drift across the vast red face. He turned to reassure Ruth. A rustling agitated the thick black leaves above them and the crimson flower cups tossed.

"Look!" the girl said sharply.

The cat had lifted its head. All at once it flattened to earth, twisted over, and struck at something above it. Deneen surged to his feet. Gregory yelled, his voice choked and hoarse. Meredith, his arms beating wildly, staggered back into the rude shelter. Near his head buzzed a grotesque winged creature neither bird nor insect, the harsh sound of its flight like an angry warning. Deneen snatched the girl's blouse from her and flailed savagely at the intruder. It landed amid the tangled growth, its wings rattling harshly.

"Look!" yelled Gregory. "Another. The air is full of them!"

DENEEN swung the velveteen blouse in powerful, rapid swipes. Outside the opening a dozen monstrous insects swooped and darted, evading the flailing, black cloth. Meredith joined in the combat, swinging his long robe. Gregory, his face twisted in repugnance and fear, used a cut branch to finish the ones buzzing harshly on the ground. Then the rain came and a roaring, steady wind. The monster insects vanished.

The queer light dimmed to an equally queer dusk, and the four humans crouched in their frail shelter that bowed and bent over them as the tempest tugged and swept and swirled over the mountain face.

"The rain—it's red—red like blood!" muttered Gregory, and shrank aside as wings rattled feebly in the growth about them. "I thought I killed them *all!*"

Deneen tasted the rain as it began dripping through their shelter. "Just the old familiar H_2O, our friend water," he said evenly, realizing the girl's need of confidence. "It's color may be due to the light effects."

"Or minute organisms or dust in the atmosphere. It is a phenomenon known on earth," put in Meredith, catching Deneen's mood. "The wind and thunder—we know these things."

"The cat!" said Ruth, her voice strangely calm. "Look at it!"

The cat was stretched on the wet trail. The rain lashed its stiffening body and the earth inched around it in trickles of brown mud. Deneen hunched his way through the semi-gloom to Gregory. "Where's that thing rustling?" he asked tersely. "Be careful. Poisonous sting or something."

They were all curiously calmer, keyed to fight, the combative instincts in their blood rallying to tangible peril. Deneen located the buzzing monster fly and pierced it into silence, using a thick twig.

"The storm drove them to cover," said Meredith. The rain pattered and dribbled on the leaky roof; leaked down in rapidly forming drops. The low thunder growls were fainter. "Just missed us—we're on the edge. This wind is not violent." Meredith was speaking with perfect coolness, one arm around Ruth. The girl was silent but she did not cry.

Slowly the rain abated and about them grew a weirdly beautiful light. The red sun had gone down and the clearing air, cooled by the storm, was like some tasteless, exhilarating wine. Rivulets of water on the mountain slope sparkled like diamonds. "An amazing world—a marvelous world!" said Meredith and looked at his niece. She was not crying. Her slim body was stiff as if an inner determination braced her. She watched Deneen leave the shelter, kicking the pierced body of one of the great insects ahead of him to examine it in the light.

"Like a big lady bug," the younger man told the professor ten minutes later. "Except for those grapplers below its body and that stinger." He touched with his foot a long dull-colored pointed protuberance on the thing's face.

Gregory and the girl were farther down the trail looking over the valley below. "Uncle," she called. "Alan! Come here! How unspeakably beautiful!"

The growth-choked gorges were an amazing sight. The upper surface of the wet leaves transformed the world below the watchers into a fairyland of colors. Meredith looked, voiced his admiration, and went back to the monster bug. Deneen stood close to the girl. Her shoulder brushed his arm. The long blue gown was wet and bedraggled, and clung to her supple body. Like a remembrance of another world, the faint rouging still showed on her lips. It came to Deneen sharply that the woman was beautiful.

"Guess I'll go back to that fly. There's something queer about it," he said. The girl and Gregory followed him. Meredith readjusted his spectacles and turned to them.

"There can be little doubt now. We are not on earth at all. This thing does not fall into any classification of any earthly species. I've made a specialty of biology, but even one less informed than I would be faced with that conclusion. Look! Give me a stick!"

They watched him pierce the circular creature on the ground. "This thing has no internal fluids," Meredith exclaimed, his tone rising. He severed the round, big-eyed head from the body. "Look! I tell you this is not protoplasmic material at all!"

The girl was very attentive, her instinctive disgust passing. "But, Uncle—"

"I know. Without protoplasm—no life. But how do we know? Perhaps other elements have been used by the vital force—we must prepare to see the most amazing—"

"How are we going to eat?" asked Gregory, watching the big, dismembered bug. "I don't remember much biology but that thing looks like sawdust inside. If higher animals, or whatever they are, are composed of the same stuff, and fruits, how—"

Deneen saw Meredith's face set as the full implication of Gregory's question sank home. "God!" the scientist breathed sharply, straightening. "If all life here is composed of another synthesis, we will starve as surely—"

"Wait a minute," said Deneen sharply. "How about the rocket ship." He glanced sidewise at the silent girl, then meaningly at Meredith.

"But they can be creatures of mind alone!" muttered Gregory. "I've read some scientist on a subject like that."

"Forget it," advised Deneen. "This world can support life as we know it. Proof—we're alive. Let's try to reach the valley before dark." The girl looked at him, as he took her arm. "Come on."

DENEEN did not himself feel as confident as his words implied. The discovery was a crushing one. The beautiful, incredible scenery below them seemed to take on a sinister tinge and all the vastness about them mocked their puny strangeness. But the mood did not hold Deneen. He did not feel utterly alien to the queerly-lit world about them.

They went down along the mountain, the girl looking back to the dead, stiffened cat. The slope grew steeper. Meredith ran conjectures through his mind, voicing some of them aloud. Deneen suddenly stopped and pointed. His voice rang. "Look at that! Birds! Real *birds!*" A winged flock was crossing the floor of foliage below, familiar in swoop and sound. Gregory roused himself. The girl straightened. Meredith resumed his conjectures.

"It's like everything we've seen. Partly familiar—partly different. How can we explain, for one thing, our absolutely identical weights, the weight of all things around us? That means a gravitational force exactly or very close to that which we knew on earth. The soil, the stones are identical. Those birds—you're right, Deneen—they're *our* kind— even with my poor eyesight I can see that."

"Hear them!" exclaimed Ruth. They were reaching thicker growth and long shadows grew about them. The faint path was now a shelf along the mountainside. Bird calls, long and clear and whistling, interjected into a mixed chatter of lesser peepings.

"Life!" said Meredith. "We can hear it—see it! But the vegetation—those insects—that thing up the mountain—there is a sense of utter strangeness about them. They are not of earth, Alan! Stone and soil and size are of the old order—suns and trees and some of the moving things—God!—what a riddle!"

The valley growth rose steadily to meet them. They left the ledge and went down a sharper incline. Deneen proceeded with greater caution. Finally he made a pretence of tying his shoe lace and let the girl go ahead with her uncle.

"Thought I heard some heavy body crashing there to the left," he told Gregory in low tones. "Watch out for the girl if anything happens." He shifted his position,

joining Meredith, searching the depths of the thickening vegetation with his level gaze. "We'll know for a certainty tonight, Professor, about being out of the solar system. The stars. Hello!" he added, pausing. "Look! That clump of growth looks familiar."

"Ferns!" muttered Meredith. "Giant ferns! A sickly green."

"We saw slashes of green from the mountain top," Deneen remembered. "That may mean wood—stiff wood—heavy wood. Here, you wait for me."

"No!" the girl said quickly, grasping his arm. "Let's all go. I—I'm afraid!" she admitted frankly. "It's growing dark."

The slope leveled out now. Their long views over the valley had been cut off by the growing bulk of the jungle, out of which came a myriad sounds. To the left of them a lacery of pale green made a sharp contrast to the crimson and black backgrounds. They edged toward it, going slowly through the great growths. The blue, amazing light began to dim, came through the foliage in streaks and splashes. Deneen reached the green clump, put his hand to slim hard trunks. A great relief surged in him.

"Stay here!" he ordered. "I'll just blunder around this clump." Some twenty feet into the growth he came to a solid tree piercing upward toward the roof of black leaves. Its surface was rough, familiar bark. Deneen could have shouted his satisfaction. There seemed to be quite a number of the solid trees, for all the world like loblolly-pines. He groped around in familiar rustling grass and found a dead branch. Several of its outthrusts broke with sharp cracks in his hands and the little group among the ferns called anxiously.

"Come back, Alan," he heard the girl's voice. "I'm afraid! There's something—" her voice trailed off.

"All right!" reassured Deneen. "Just looking for a club. Ah!" he voiced his discovery after a short search, "here's a good, solid implement."

Then Ruth Meredith screamed. It was a terrible cry, the quality of it sending a cold shiver through Deneen even as he whirled and plunged back. He could see the girl and her uncle and Gregory huddled together on the edge of the squat palms. Their very posture was terrifying in its significance. Deneen plunged through underbrush and came face to face with an apparition which chilled his blood.

CHAPTER IV

The Flash in the Sky

ACROSS from Meredith some five yards away, the tangled vegetation had parted and framed the front of a body and head. A nightmare head, long-snouted like a turtle, its mouth quivering slowly while two weird eyes surveyed the terrified humans near the trunks of the pale green ferns. It was a huge thing towering well above them, its body front a dull gray, short-armed and thick-haunched like a kangaroo. And like a kangaroo it hopped, though without any visible lengthening of legs. It hopped out, its fixed grin horrible to see in a shaft of light coming through the trees, its working lower jaw operating mechanically.

Deneen, slowing in his run, heard Ruth Meredith moan. The sound snapped something within him, restored the surge and warmth of blood to his chilled body. He felt the contracting shock of his muscles lifting him again to full, powerful plunge. Yelling hoarsely, he cut down the distance between them and the towering gray apparition.

The thing whirled with uncanny speed and slapped at him with its short arms. But Deneen's hurtling plunge carried them both to the ground. The man fought with berserk fury, his very flesh crawling to instinctive revulsion of the creature striking at him.

And with his rage there soon mingled an exultant sense of mastery. The big, weird apparition was no match for him. It could not turn him over. Deneen suddenly released it and, squirming himself free of the clutching arms, he lunged back striking savagely with the club he had found beyond the ferns. They threshed about—the man's strength nullified by the amazingly agile movements of the big gray bulk now plainly trying to escape. It got away from him, went leaping and plunging into the jungle depths. Ruth saw it collide with one of the vine trunks, fall, and run aimlessly about, then dart away as if whisked by some powerful propelling force. Deneen had followed a little way but the girl's urgent cry had halted him. He turned back.

"Alan!" she called. "Alan! For God's sake, don't leave us! Never leave us again!" She ran to him sobbing, her knees weak, her arms clutching him in spasmodic embrace. It was a purely instinctive move. Gregory did not notice at all. He stood stiffly, gazing with wide eyes into the vast, light-streaked forest. Meredith voiced halting reassurances to the girl.

Deneen felt the reaction of his wild fury. The girl's hair was against his mouth. She was almost frantic with terror and clung to him with the tenaciousness of a drowning person. He talked to her and gradually steadied his own voice. She grew calmer. But it was quite a while before she dared to look around. Gregory came to her. Deneen went over to Meredith.

"Uncanny, my boy, uncanny," the physicist said, his voice a bit hoarse. "All through those terrible moments before you came, I wanted to move but couldn't." The scientist in Meredith was at a very low ebb. He stayed close to Deneen. "What are we going to do—tonight? That girl will die, Alan. It's all too horrible."

"If we could only build a fire." Deneen felt helpless. Gregory and the girl had hurried over to him. He could feel the pressure of the woman's body against his side. The other men were nothing to her in those tragic moments. To her, Deneen had come to represent safety in a world of terror. The knowledge stiffened him. "If we had fire," he repeated doggedly, his mind working over several ideas.

Fire. The word had a simple sound. But they soon realized how difficult it was to conjure out of the elements the licking red tongues which first had spelled man's mastery over another planet.

The unexplainable conclusion that they were off the earth was forced upon them with the coming of night. The evidence of the stars outweighed the testimony of the pine and fern trees. The blue sun had hardly gone down below the horizon before the first stars appeared. It grew dark with appalling rapidity. Deneen, carrying his club and several pieces of dead wood found beneath the pines, led the party to an opening in the jungle where water gleamed in the growing gloom. Working hurriedly

with the precious jack-knife, he sharpened a stave and inserted the pointed end into a notch cut out of a broader branch. But though he twirled till his arm muscles ached dully, not a spark appeared. It grew steadily darker. His three companions stood huddled close over him as he crouched by the side of the quiet pool. Deneen finally gave it up.

"This base block is too soft. Dead too long. Maybe it's myself. I've just read about making fire this way. I'm no Eskimo nor Indian and because I'm not, we're in a fix."

The pool formed a circle edged with the dark fringe of vegetation. Meredith studied the sky. His voice sounded hopeless when he spoke.

"It's true. Since I woke in that wrecked laboratory, the utter impossibility of this thing has mocked me. Yet it is true. We are out of the solar system. Look!"

Even to Gregory the sky was strange. Ruth revived girlish memories and looked for the familiar configurations of the Big Dipper and its related tracings she had known in North American skies. Several of the stars were big, bright glinting daubs. A pale diffusion of light glinted on the waters of the pool. Meredith peered through his glasses. Deneen finally said, "Wait a minute. Isn't that Orion's Belt? Look up there!"

"AND there's the Scorpion!" said Ruth a bit excitedly. "Does that mean . . ."

"It means nothing, child," said Meredith in his hopeless tones. "Many of the star groups form real cosmic neighborhoods and are so far away that even a tremendous shift in space does no alter them. But look at those bright splotches of light. No star ever appeared like that from on earth.

"And the Milky Way," he went on. "There is our evidence—irrefutable evidence that the unbelievable is true—we are in another part of the sidereal system. We have moved up from the original cluster near its center—up toward the heart of the Milky Way. Look!"

There in the sky was a starry path, its edges ragged, streaked with gaps of lesser luminosity. Meredith muttered as if to himself:

"I am mad! Mad! This is all a dream. How can it be possible? Alpha Centauri, the nearest sun, was twenty-five trillions of miles away—"

"Listen!" said Gregory sharply. "What's that? I hear things moving!"

The girl edged closer to Deneen. Rustlings sounded in the forest, sharp chatters.

"Get up a tree!" decided Deneen suddenly. "We can't build a fire." He peered around. "There's one. Slants just right. See!" he added sharply. "Where it meets that bunch. We can find a place to rest there till morning. Here you, Gregory—" a bit sharply. "Help me get her up there! Move!" He threw his club aside into the underbrush.

The next ten minutes were strained, fear-filled. For the forest about them seemed alive with a horde of unseen creatures.

Like their remote ancestors in another age and world, the four humans huddled on a swaying perch some thirty feet above the ground. The size of the vine trunks should have made the junction of several a perfectly solid mesh, but the peculiar vegetation of that strange world was more like rubber than wood, thought Deneen as he supported the girl. Something like a bitter protest rose in him. Why had they been made victims of this cosmic, incomprehensible jest? He stared up at the strange sky. Meredith was muttering.

"Perhaps . . . perhaps I should never have bothered with the electronic system. What right has man to meddle with the Creator's work? Do you realize just what is about us—what we are seeing?"

"Buck up, Meredith," advised Deneen grimly. "Remember the scientific spirit. We need it now, badly."

Things moved in the gloom below them. Ruth's breath drew in sharply as a dim form was silhouetted for a moment against the faintly gleaming pool. They felt the jar of some body striking the boles of their support.

The thing, whatever it was, was joined by others. Time seemed to drag, a slow heavy stream. Then a harsh chattering rose farther in the wood and the prowlers below edged away.

The four humans above scarcely dared to breathe after that. Silence closed in around them, an utterly heavy silence broken only once, and then by a hooting, ghostly call. Something sailed overhead on downy wings, a floating shadow of noiseless movement, but Deneen felt a surge of gratefulness as of a man falling, who finds foothold. There was a feel of reality about that hooting night bird—its ghostliness was of a world they knew. But the things which had moved below them—Deneen forced the thought out of his mind.

They were scarcely out of discomfort as yet, though Deneen wondered if the girl could stay all night in her cramped position. He moved to her, noticing that Gregory was farther away. What did it matter in any case? New York and the human relations they had known, he thought in a swift, almost humorous flash, were scores of trillions of miles away somewhere—he wondered suddenly if they had ever existed. Had he ever been Alan Deneen, Harvard man with a football record, and a family that remembered Boston when shipping docked well below the new harbor?

Was he dreaming this thing, or was his mind holding the disordered fancy of another world—a world of cities and lights and safety. The girl crowded close to him, a little sigh of relief escaping her as fingers clutched his powerful biceps. He felt her need of him, sharply felt it, and the realization cleared his mind of its strange groping.

The girl was more affected than he. So was Gregory, who sat in stolid strange dejection in a crotch of two trunks. The silence seemed to be afflicting Meredith as well, for the one-time brilliant research worker in physics and bio-chemistry, a man quoted in the scientific circles of two continents, was now a humped shadow a little below Gregory. He had ceased looking at the sky. Deneen fought the queer spell.

They had to hold on to memory, to remember themselves as part of the powers of the race of men—to fight for survival in that alien world. "We'll find food tomorrow," he whispered to the girl. "Sure. And some safe place."

RUTH merely clung closer to him. The darkness and silence were working upon her. She could no longer think. The shock of rapidly succeeding events of utter strangeness had numbed her. Instinct whispered age-old

messages, and in the Stygian dark the feel of the man's powerful arm was anchor and salvation. Deneen shifted position, gained foothold on a branching of the trunk below him, and let her rest fully against him. It was, he decided grimly, going to be a tough night!

Time dragged. Then Gregory suddenly muttered: "Look! What's that?"

Meredith moved among the branches.

"I've been noticing it. Light. Moonlight!" he said sharply. "See!"

They watched. Deneen could see a silvery tracery of light and shadow grow slowly on the smaller growth below them. Long fingers of the pale light stole through the trees and touched the still water of the pool with a sheen hauntingly familiar. They did not move, clamped by the beauty and magic of that stealing, silent glow. Deneen could feel the girl's gladness—it seemed to tremble in her soft body. "Moonlight!" she whispered, and the man shook off the sense of fatalism, of drifting will that had fallen over them all.

"Wait!" he muttered, and called to Gregory. He had to call again, a sharp, impatient note of mastery in his voice. Meredith clambered up very cautiously to help Gregory hold the girl. Deneen climbed farther up the tangled boles, up among the crowning of thick leaves. Splotches and patterns of the silvery light played over him as he ascended. He pushed through the foliage to look over its upper surface, over a weird reflection of color. Then above to a sight which held him motionless.

Sailing past the mountain bulk in his line of vision was a golden orb, a huge disk in the sky. Deneen stood rigid for a long time, his wonder mingled with an unreasoning disappointment. This was not the moon of earth, not the yellow face that rode the heavens over the races of men. It had black markings running in featureless confusion across a surface large as a locomotive head. There was faint suggestion of nebulosity on its edges. Deneen stared, his feeling of disappointment slowly ebbing. Something like reverence was in his heart as he prepared to descend.

Then the sound came to him—a far, mingled drone and shriek that grew louder, shriller, bringing to mind the rocket ship they had seen a few hours before. Deneen twisted about on his precarious perch and saw confirmation of his instinctive thought. Splitting the semi-gloom of the farther horizon was a long, gleaming shape, trailing plumes of gray vapor that glinted in the light of the rising orb. It crossed over Deneen and he yelled suddenly, realizing the rocket ship was falling. It was plunging into the mountainside ahead.

The expected crash did not occur. Deneen saw jets of red streaked vapor spurt from the ship's front end—saw the earth on the mountainside spray upward as if struck by some tremendous moving impact. The long hull veered up and around the bulk of earth, scraped against it—settled to a surprisingly sudden stop.

Below Deneen, his companions were calling anxious questions. But the man above was again rigid. His gaze, grown piercing intent, never shifted from that silvery shape that seemed hung on the mountain flank. Suddenly he yelled, his voice blaring powerful, surging with relief.

"Men!" The word rang out over the hauntingly lit world. "Men, by the throne of Jehovah! Two-legged, machine-making men!" Hurriedly he lowered his lithe body, sliding down the vine trunks.

They were like poverty-pinched persons come suddenly into vast wealth, drunk with relief, eager with anticipation. Deneen gained self-control first. He reached the forest floor and caught the girl as she slid down the smooth inclined trunk rooted near the pool edge. Meredith and Gregory looked like burrs, inching slowly toward them. "Hurry!" whispered the girl, gazing about her. The jungle was laned and streaked with silvery light. But between the pale shafts were large patches of blacker gloom and imagination gave them shape. "Hurry!" she called again. Deneen gave terse orders when the two men reached them.

"Keep the girl in the middle," he instructed. He moved along the pool edge, kicking pliant undergrowth till he located his club. Slowly the others followed him through the dappled world where rope-like creatures bound the forest roof into arches and traced out paths among the vine trunks. They had not come far from the slopes and Deneen kept the position of the big rising orb in mind.

"This way!" he whispered, as a shrill fizzing sounded through the silence. "They're shooting rockets or something. Come on!"

The girl kept close to him as they half trotted through the queer growths. It was she who first noticed a fire in the woods. "Look! See them? Flames!"

They moved up the first gentle sloping till abreast of the growing conflagration. Then the earth began to pitch sharply upward. The going was rough here, for the growths, though thinning, lay in horizontal lace-works that turned them in erratic courses aslant the slope and sometimes down. Deneen could hear Meredith's labored breath. The elderly scientist was in no condition to endure such a forced pace.

Deneen finally slackened speed. A little below them now were ruddy glows and flickers, a spreading band of illumination backgrounded against the tangled growth. "The rockets set it off!" muttered Deneen.

The girl clutched him. "Those things!" she breathed sharply. "Crossing the fire! See!"

There was a rustling about them. Gregory suddenly yelled, a choked, short sound. Meredith stumbled in the surge of a flurry of attackers—towering shapes that seemed to materialize out of the moon-streaked gloom. Deneen pivoted, smashing with the club in his right hand. He jerked Meredith free from the mixture of battling forms. Gregory was threshing with terrified energy. He broke away from his assailants, to be leapt upon and borne down again by things that hopped and chattered hoarsely. Deneen's plunging charge broke up the group again. Gregory rolled free once more. "Run!" yelled Deneen, springing back to the girl. "Run, Ruth, run! Up!"

THE next half-hour lived in Deneen's mind as a series of blurred yet violent sensations, punctuated by scenes which stood out clear and sharp, unforgettable, haunting. Gregory, in a blind panic, led the four in the flight up the slope. Deneen was calmer now, lacking the wild urges of the hours gone. The hopping, weird kangaroo creatures were not very formidable. The feel of this entered his mind subconsciously, a reflection of his own superior strength, the ease with which his club blows scattered their

assailants. But gradually, on the run up, and after gaining the open mountainside, the feeling passed.

The night was alive with a stirring, quick-moving horde. It seemed as if the ground materialized the persistent, clutching things. The vegetation opened up rather suddenly as the four gained in a final burst of flight, the long shelf they had descended some hours before. But here they were overtaken again, cut off by the hopping foe that moved across the background of ruddy fire farther along and down the mountain. Calmer now, Deneen fought with more efficiency, backing in a circling, slow whirl, his flailing club dropping one after another of the attackers that sprang in, futilely pawing with their short forearms.

Meredith and Gregory fumbled along, the younger man striking with his clenched fists from inside the circle the agile-footed Deneen made around them. Again they broke away, leaving two grotesque forms sprawled on the slope.

"The ship!" yelled Deneen. "Straight across!"

He let Gregory, Meredith and the girl pass him, then ran with them. They were overtaken again by the persistent, impotent things which lacked not merely weight and strength, but any ordered method of attack. Deneen fought them off, a curious impersonality entering into his motions. The thing was to gain the rocket ship farther along the slope. There were men there—creatures at least resembling men—he could hear the accelerating whir of rockets—men who fought something after the fashion of the world they knew.

The ruddy glare of fire was growing about them—over the strange battling on the slope sailed the huge golden orb—Deneen caught glimpses of his position—of the aspect of the mountainside, in brief interludes between rushes from the hopping confusion of enemies.

The attack came again. One of the kangaroo things leaped directly toward him with abrupt speed. The smash of Deneen's descending club was solid—it hurt his wrist, left his whole arm numb. The girl screamed as he stumbled and went down under a concerted rush, over the sprawled body of the creature he had struck.

Strangely dry forms pressed upon him, fingers gouged at his eyes.

Then the first rocket whizzed among them, a tearing thing that scattered the pack. Deneen lurched up, his senses reeling from a great effort.

Gregory was some twenty yards away, running like a frightened deer across the wan-lit mountain-face, sliding, bounding, heading for the smoke-fringed ship and the forms around it. Behind him stumbled Meredith. Deneen, his eyes blinded by perspiration, whirled around. "Ruth!" he yelled. "Ruth!"

The woman's choked cry brought him racing back along the shelf, raging again, his sense of combat now sharp and real. A confused mass of gray scattered before his plunge, split by the drive of his hard shoulders. Another rocket whizzed along the earth. The hopping things broke away like a flock of frightened quail, and Deneen swept the girl up from the ground. "Come on! We can make it!"

They began to run toward the center of smoke and noise, where glinted the silvery end of the rocket ship. "Look!" cried the girl, slowing. "They're firing at Jim! They've caught him!"

Deneen halted. There was a flurry around the ship. It was almost as bright as day now, the valley below supporting a giant torch of flame. Plainly the people or creatures around the ship shot at Gregory—the white tracery of their projectiles was all around him. But he plunged on, either maddened by fear or unable to change direction on the narrow shelf. Meredith was stopping. He began to run back. Then Deneen and the girl saw a group of men move out, bunch around Gregory a moment, then continue after Meredith. The scientist fell, plainly exhausted. Deneen half growled his despair.

"Alan!" the girl screamed. "They're killing Uncle George!"

Deneen ran along the ledge, a tattered figure, hope gone from his thoughts. The group of men ahead had surrounded Meredith. From the ship spurted a puff of smoke. Deneen dodged instinctively, but the weight of worlds seemed to crash against his head and he went down, vainly fighting the nausea that swept over him.

He lay quivering, his bruised and bloody face relaxed against the earth, his body faint and helpless. But his consciousness seemed clamped by the iron purpose of his will, and dimly he heard and saw. Heard the growing roar of the inferno in the valley below—heard shrill, rising fizzes that merged with a drone, that died away. Dimly he knew that the rocket men had gone.

Above him sailed the vast golden moon of an alien world. And later, a low monotone against the fire roar, he heard a woman sobbing.

CHAPTER V

Sustenance

IT was the sound of a woman sobbing which held Deneen on the borders of a black gulf. He seemed to fight for long ages against the rushing tides of darkness that welled up and ebbed, rose and fell across his soul. He could hear a woman sobbing—feel her arms pressing him, holding his throbbing head against soft breasts.

Deneen's senses slowly cleared. His numb arm moved, his fingers dug into the soil. "Ruth!" he muttered hoarsely, twisting, a sense of danger clanging like a warning bell through the fog of his perceptions. "Those things!"

"They're gone, Alan! Everyone's gone! They took Jim and Uncle George away—the men of the rocket ship, I mean." She was incoherent. "The other things have disappeared." Deneen made an Herculean effort, rose to hands and knees, then to his feet. The woman steadied him. "Got to get out!" the man groaned. "Quick! They may be back—anybody—anything! I can't see to fight! Help me!"

They staggered aslant the vast slope, long shadows preceding them. "Which way, Alan?" the girl asked, bravely trying to support the man's lurching weight. "Which way?" Her voice was breaking.

Deneen fell. He lay for a long time prone, his teeth locked in effort. The woman broke down. She was exhausted by physical and emotional excess, and the palely lit world about her mocked her weakness and the helplessness of the man. She tried to wipe the blood from his bruised head, using the end of the now terribly tattered blue gown. "Alan! Alan!" The cry was low, hopeless.

Her senses began to waver. They were doomed to die, the man and herself on that inclined bulk of earth beneath the vast red moon.

But Deneen's strength filtered back slowly in trickles and spurts. He made another attempt and went farther, though the woman was little help to him now. Resting and moving by turns, the two small figures moved across the mountain, veering away from the inferno of fire in the valley below. The night wore on. Their shadows shifted positions, shortened, and went around them as the giant moon sailed along the arc of sky.

There followed long hours of effort and pain. The huge satellite slid slowly to its setting. Deneen and the woman had rounded the mountain bulk, and the roar of the fire was replaced by a brooding utter stillness. At times a rosy glow, growing about them, heralded the dawn.

A gurgle and fritter of water pulled Deneen aside. He bathed his bloody head and face in a flowing stream, and drank. Then, resting on his back, one outstretched arm about the huddled woman beside him, he watched the last bright stars dim and fade. Daylight. Daylight, and the grim spectre of starvation staring both in the face.

Yet there was something in Deneen that cried that he could not die. He could not let Ruth Meredith die. No conscious thoughts held his mind for long. Even the utter riddle of their position ebbed from consideration and, like an animal, Deneen accepted what his eyes saw, what he heard and felt around them. It was an instinctive rallying of all his faculties to the grim needs of the moment. He lay relaxed, letting his strength flow slowly back into his bruised tissues, strained by the wild efforts of the hours gone. Ruth went to the stream to drink again and returned with a torn section of her dress soaked in the cool water. She bathed the man's head. After a time Deneen sat up.

"It's better here," Ruth said, watching him. "More like our own world, Alan. Look at the stream. Like a hundred streams I knew near the Gregory lodge by Saranac Lake." She was curiously calm, as if stunned.

The light of morning strengthened.

Deneen watched flowing, tumbling water going toward a belt of forest that wound sinuously between parallel rises of earth. The slopes were covered by black tracery of the vine trunks, but the thicker forest below was banded with green, a central wide lane running into the hill masses. Far in the distance he saw glints of water in an open glade.

"A river, Ruth. This stream flows into it. Let's go down." He said nothing of the problem of food.

"Alan," the girl questioned frankly, her blue eyes holding pain. "Do you think Jim and my uncle are dead? And can we live without weapons, with nothing?"

"Come on," said the man evenly. "Hold onto my arm."

They followed the stream down.

A RIVER flowed in the wooded valley, a strange river. Deneen could hear a great splashing, a confused, watery roar as they threaded a way through the growth. A feeling of safety, almost of normality, returned to both, though the shadow of the hours past brooded at the back of the girl's mind. For the light around them was for all the world the light of an earthly morning. Golden yellow lanes of sunlight pierced the forest and they heard the twitter and whistle of birds. They saw no signs of the kangaroo-like creatures. Once something crashed in the underbrush to right of them, but Deneen's heart leaped with a surge of hope. He had caught sight of a tawny, antlered shape, lifting in graceful leap over one of the horizontal creepers which bound the rubbery growth.

"Deer!" he muttered. "Why not? Birds—green trees—why not?"

"Alan—this is like home," the girl said. "Did we dream—" she shuddered, "can it be?"

Deneen paused in an open clearing. He stepped back into the yellow sunlight and looked up.

"No," he said, coming back. "We didn't dream. It's stranger than a dream. That's the big fellow—the first red sun we saw yesterday in the sky." Ruth's head bowed.

Deneen took her sober face in his hands, lifting the bowed head. Her features were scratched and bruised, and the markings of tears streaked across cheeks that, to his knowledge, only a few hours before had been delicately powdered and immaculate. "Poor kid," the man said, his head shaking. "Let's find the river. Don't think. Just don't think. There's a blank wall facing us that way, Ruth. We have to eat."

"Jim—my uncle!" She cried in his arms softly. Deneen stroked the auburn mass of hair. "Buck up, Ruth. Forget. I'll go back later to see. Perhaps they left some trace. Let's find the river."

They could hear the water splash and toss long before coming in sight of it. Ruth kept close to the man. Deneen was still weak and his head throbbed with every pulse of blood. But a curiosity grew in him, dwarfing the sense of his pain and the hunger like an uneasy ache in his stomach pit. It was a strange river, the unseen stream ahead. Sounds came to them as of a gigantic cauldron, bubbling, splashing.

They gained a bluff overlooking the waters. Here the growth about them was familiar green—Deneen went to his knees in long grass, unmistakably grass, the better to peer over the sheer drop. He looked at an amazing agitation of grayish green, tossing waters.

"Rapids," suggested Ruth, inching cautiously forward. For a long time Deneen looked down. "No," he disagreed. "There's no flow. Look—the water seems higher below us than farther down. A raised wall—moving slowly that way."

Ruth came to lie with him, face downward, gazing at the tossing maelstrom below. "Seems to be two currents meeting," the man concluded. "The stronger one is curling over the other." He rose. "We'd better get closer. The bluff slopes down. This way."

They cautiously headed through stunted trees rooted close to the edge of the river chasm. The ground dipped. The splashing grew into incessant watery din, reached a climax and ebbed. They descended into growths of taller, stouter tree clumps hung with brown meshes like Spanish moss. And the gray-green water lapped before them in a long line. The roar was subdued, seemed retreating. Deneen leapt to a stone on the edge of the waters, dipped his hand and tasted.

"Ugh!" he grimaced. "Salt! Saltier than the Atlantic." For a moment his mind worked over the riddle. He squatted on the stone, his broad back bathed in sunlight. The woman watched him, one hand supporting her against a solid tree. Deneen looked at the close, agitated waters. He suddenly turned.

"The tides, Ruth! This may lead out to some vast body of salt waters. At low tide the river from the mountains runs into it, but now the sea is forcing its way back."

"But we didn't see water from the higher mountain slope, Alan." The woman looked at him. Her gaze had watched his every move since dawn.

Deneen shrugged. "Just a guess, of course. But it struck me while I looked at that water that the tides on this world, what with those suns and moon, must be enormous rises if there are any free oceans. I wish your uncle were here. I'm just an amateur at scientific speculation."

She stood patiently nodding. Deneen suddenly growled. "I'm sorry!" Her face was drawn, tired. "Our first job is to find food, not explanations. This water is salt, whether it comes from an ocean or anything else. Maybe there are fish in it. Come along. We'll go slowly." But he muttered a few minutes later— "What a world!"

The roar of the moving turmoil gradually ebbed. Deneen's flash of curiosity died. He felt the hunger ache in his stomach, noticed again the girl's drawn face. "Poor kid!" he said. "Let's try it here."

THE river was a broad, green band a little below them. It was but little agitated at this point, and apparently flowing very slowly, if at all. Deneen broke some branches, smelling green leaves in the process, even tasting them. He made a couch for Ruth. "You wait," he said cheerfully. "We'll rustle up a meal, somehow."

"Alan!" Her voice was sharp. "You won't leave me?"

"Don't worry." He stripped off a tattered, badly soiled shirt and judiciously regarded it. The back was intact. "If there's anything that looks like a fish in that water, I'll get it," he vowed.

She watched him work fixing a rude net, her eyes wide in a pale face. She knew he was talking for effect. Sitting, the man removed shoes and socks, rolled up his trousers and waded out, the shirt knotted into a clumsy scoop attached to a short wooden pole. He balanced on a rock a few yards from shore, little curls of foam about his legs. The limp shirt soaked in the water and slowly sank.

Time dragged. It grew hotter. Ruth watched the man. A tenseness came over Deneen. He stood very still. Then Ruth saw his body twist sidewise as he pulled the crude net clear of the water. A silvery, twisting mass flipped clean of the streaming cloth and dropped back into the river. Ruth came erect, her heart pounding. "Alan! Fish!"

She stayed close to the water, a new light in her eyes. Deneen moved again to identical result. The woman cried in dismay as a blue and white, writhing shape dropped out of the imperfect net. The significance of her whole life seemed merged into the success or failure of that primitive, strange fishing.

Deneen lifted his head. He looked along the river, a wild figure of a man, shirtless, his tawny hair bloody and disheveled, the faint tracing of a brown beard on jaw and upper lip. "What is it, Alan?" the woman questioned, peering along the wall of vegetation.

"Smoke," Deneen answered tersely. "Probably from last night's fire." Ruth's eyes clouded with the terror of a memory. "There seems to be a patch of burning driftwood coming this way. We're in luck!" Deneen added decidedly.

She did not understand. Deneen ceased his intent gazing and watched the waters again. Time dragged. It grew hotter and the familiar yellow sunlight merged to a purple coloring. The woman sank back on the prepared mass of leaves hopelessly. Across the screen of her mind a picture passed—a picture of a murky sky holding two suns, an incredible thing her eyes had perceived but her mind still refuted.

Alan jerked the net again. He let go the pole and clutched the dripping cloth with both hands. "Got him!" he called, his voice ringing. He came splashing in to shore, throwing the fish well away from the water where it flopped quite after the manner of fishes drawn from earthly streams. "Now for the cooking!" the man said. Ruth watched him with wide eyes.

Borne by a slow, almost imperceptible current, a mass of smoking driftwood came to sight on the waters. Three silvery blue shapes now lay in the grass, one still flopping vigorously about. Deneen found a longer pole in the wood and, wading out, intercepted the smoking mass when it drifted by. As he pushed it toward shore, it fizzed sharply and he saw red embers among the charred middle.

"I tell you we're in luck!" he said heartily, and set to work pitchforking the live pieces out of the tangle. Ruth found herself helping. They soon had a fire crackling by the water; flames that fanned and flickered in a rising wind, and sent up acrid smoke. Deneen tried an experiment. He went far in from the river to the black, rubberlike growth and gathered an armful, taking it back to the fire. The vegetation flamed like kerosene-soaked wood, fairly melting away. The man grunted as if the sight filled him with satisfaction, and began to prepare the fish.

"Wish I knew more about things like this!" he muttered. "This is camping with a vengeance. Except for this jack-knife, we're as stripped of artificial aids as *Pithecanthropus erectus*."* He cleaned the fish, covered them with leaves and a layer of dirt and surrounded them with hot ashes. Ruth suddenly cried. Some realization of their predicament backgrounded on her mind in contrast to her last meal, came to her. Vividly for a moment she felt the pain of loss—the memory of Jim Gregory and her uncle gone to some mysterious doom in this alien world. But Deneen made her eat. One of the fat fish was slightly charred, but the meal passed the tests of their hunger-dulled judgments, and the woman's mind lost its sense of acute pain again, and accepted the gray-green river—the tattered brawny form beside her utterly primitive food.

Her sense of awe and fear and wonder, too long peaked beyond normal, reacted to a strange stoicism. But once she said, in reply to Deneen's cheering encouragement, "We can't live, Alan. You know we can't live. Why are you trying to keep it from me?"

Deneen had not answered for a while. Then— "We'd better make some sort of a shelter on the mountain by that stream. We can take fire up there. Can you walk?"

She nodded mechanically. They passed slowly away from the river, Deneen holding a smoldering branch.

TWO days later there was a rude lean-to on the mountain overlooking the twisted valley, and in the wide doorway a man cooked fish. Fish . . . eggs from a ravished nest that hung over the gorge where waters ebbed to and fro; meat held on pointed sticks over naked

*The Java ape-man who walked erect.

flames . . . meat from a group of woodchuck-like, furred creatures whose burrow the man found farther down the river. The brown tracery of beard grew over Deneen's jaw and his bruised head healed. His head shook often and sometimes he looked with bitter questioning at a strange sky. For the woman's stunned soul, recovering, recoiled from what she saw, from the memory of those first terrible hours when events had succeeded one another too fast to be fully realized.

She cried continually. Jim Gregory was dead. And Uncle George. Printed deeply into her mind was the picture of what had happened on the mountain slope. She could not forget—could not believe.

But the days passed, and they saw no more of the kangaroo things. Two suns rose over one horizon, back of the mountain bulk, and followed one another across the sky. At night the vast golden moon sailed over the jungle. It lost its fulness, became gibbous and distorted, rising later each night. In the river which twisted through the hill mazes, the water swirled and moved in alternate directions at intervals which puzzled Deneen. Two suns and a vast moon were a complicated set of tidal forces, operating on some body of water past the upheavals of earth.

Deneen began to mend. He was incessantly active, thinking, hunting, searching every clump and hollow and hillside for food or foe. He cheered the woman. They would live—perhaps solve the riddle of their appearance on another world.

On the fifth day of their stay near the little stream they heard the rocket ships again. A faint shrieking fizz, somewhere in the distance. The woman stared at the morning sky. "We'll go around the mountain tomorrow, Ruth," promised Deneen.

But the other side of the mountain held for them no comfort. The broader valley into which they had first descended was a charred slash of growth, still bordered in the distance by smolders of smoke. Deneen, holding a knotted, solid club, and followed by the girl, came to two sprawled things on the ledge and spent long minutes examining them. The dead kangaroo creatures were beginning to disintegrate, but there was no trace of odor in the air, not a sign of maggots or flies. One of the gray bulks had died from his club smash and the wound was plain in the triangular head. A bloodless dent. Deneen shook his head. He turned to the girl.

"This substance is like cork, not flesh. There are hundreds of tiny fibres running through it. They die easily. I suppose it would have been a fascinating thing to examine them in detail if one of them had appeared in the world we knew. But to me they're dead—that's all. When alive, protoplasm or no protoplasm, they hop around and scratch at one's eyes."

The girl shuddered.

"I had the weirdest sensation, Alan," she said, "when they attacked us. Like dumb, striving things—half-things—" She kept close to Deneen as they moved along, and looked back at the gray, sprawled shapes. "Half-things—"

"Forget it!" advised the man. He watched the girl out of the corner of his eye. She was searching the mountain face with pitiful eagerness.

But of Gregory and Dr. George Meredith there was no trace. At one place, near where the ledge petered to the faint marking of the path up the mountain, were cuts and gouges and the circular imprint of a long shape where the rocket ship had rested. Scars in the earth, their edges charred and fused, showed the power of the propulsive gases. But the whole marking was devoid of any clue. Deneen soothed the girl.

"Perhaps they're all right—these rocket-shooting fellows. Gregory and your uncle may be a lot better off than we. Let's go up the trail and take a good look around."

They had started very early when the first red sun had not yet risen, and the gibbous vast moon still hung in the sky. They were well up the faint trail by the time the full heat of midday began to slow their pace. Deneen led the woman by the shelter they had made before the rain storm on their first descent. Familiar flies buzzed about the cat's body, and a faint stench permeated the air. The monster lady bug was gone from before the entrance, and Deneen restrained an impulse to search for the others he had killed. He was somewhat surprised to feel the girl clutch his arm.

"I have never thanked you, Alan. Since we woke in this terrible world it has been you who has kept me alive. Jim and my uncle were as helpless as I." He put his arm around her slim waist. For a moment the memory of another world lived again, and his gray eyes lost their steely weariness. They smiled.

"Forget it, Ruth. Perhaps everything will turn out all right. God is bigger than the solar system. I've never been too pious, but it seems to me this is an amazing thing that has happened. We must keep up."

She looked at him intently. "I'll try, Alan." Her voice was low. "I'll try."

They passed, later in the day, the place where a slide of earth, now sunbaked the color of its surroundings, covered a crumbled shell of wood, some wired tubes and an aluminum table. Deneen stopped a while brooding, like a man standing before the door of a riddle too great for his comprehension. But the urges of immediate necessity dulled the usual, futile questioning, overruled the civilized part of him which could neither understand nor believe.

It was dusk, and the woman was utterly spent by the time they reached an altitude which gave view over the banks of smoldering smoke in the distance. Beyond them was a flat dark expanse, running to the horizon. "The ocean!" said Deneen, supporting Ruth. "Look! the ocean!"

She lay wearily against his brawny, naked shoulder. "I see, Alan," she murmured. "But what does it mean after all?"

Deneen's keen vision pierced the distances. To right of them the mountain bulk had crumbled away, giving view of the narrow, twisting river valley between the hills. "It means," said the man, "food. Clams, bigger fish. More of our kind of vegetation, perhaps. This rubber stuff doesn't like water. It means we can live, Ruth!"

"Why?" she asked again, wearily. "What for?" Her resolution of a few hours before was forgotten. It was growing dark. The blue sun was lost in its setting mists. She was tired and hopeless. "What is there for us but this—this animal life? Eating, sleeping, always afraid—for a little while till some beast kills us— Alan!" she broke down. "I can't go on!"

A noise broke in on Deneen's comforting reply. It

grew to climax and passed. The man stared up at faint traces of white smoke in a darkening sky.

"Another rocket ship!" he muttered. "Passing high up." Conflicting decisions moved in his mind. The ocean and its beaches spelled comparative safety—inland meant danger and an increasing fight for food. But he decided swiftly.

"No, Ruth," he agreed. "We can't just go on living, two animals moving for a while till their inevitable end. But we can go on. Go on to the place where those fellows are going, perhaps where they've taken your uncle and Jim Gregory. And we will!"

CHAPTER VI

Unrest

THEY went back around the mountain. The lean-to by the stream seemed home to Deneen. He had dropped a store of meat, weighted and tangled in reeds, into a pool of the intensely salt water, and the slightly frayed flesh tasted like the best of the medium steaks of his Massachusetts Avenue dinners. Memories of Harvard Square came to him in mere flashes as the days passed—he was faced with a grim, unending battle to keep himself and the girl supplied with food.

It took them some time to get over the effect of the rationless, forced reconnoiter up the mountain. Ruth had agreed without particular emotion to try the journey inland. Plainly the girl had no hope. She believed they could not live. That the rocket ships were making for some common point, some terminus corresponding perhaps to the cities of earth, her reason admitted, but Deneen came more and more to appreciate the philosophic fact that reason is at best a small part of life.

The pattern of environment wove into them—the rising of the suns, the giant crescent of moon that rode the sky later each night, the changing lights and glows and temperatures of that alien world. A sense of vastness, of their aloneness, crushed the woman. She could not understand how Deneen found food. But the man gradually won his fight.

Both changed as the short days passed, and they began their journey inland along the banks of the tide-harried river. By the time that the moon, absent for the part of one night, began to grow its crescent a little way above that horizon Deneen called west, there was little to connect the man and woman with an order of human civilization. Deneen's jaw and upper lip was a golden brown mass of beard. His hair was shaggy, though Ruth used the jack-knife to keep its length within the limits of safety, away from his eyes. She often watched him as he fished in the gradually narrowing river, or returned to their temporary camps with the spoils of his hunting.

He never hunted far from their cooking place. The jungles were alive with life and the cork-fleshed things that moved in the ways of life. Everywhere Deneen saw the double order—the green of grass, tangles of bamboo cane, palms and reaches of trees for all the world like the loblolly woods of the southeastern American coast.

Rodents, deer, a plethora of grazing, burrowing, running creatures he stalked and trapped and slew with thrown clubs and stones, creatures of flesh and blood. And through all, and away from the river, dominating all, was the rubber-like vegetation with thick black leaves, that melted away in the camp fires leaving scarcely any ash. And among this vegetation moved jerky, incredibly agile things of grotesque shapes, of various sizes and ways.

This order of being could not serve for food; it was somehow alien, and the man's eyes gazed coldly at the bigger forms he encountered. They were not formidable enemies, despite the speed of motion. The kangaroo types had absolutely disappeared. The great fire beyond the mountain had evidently driven them to other country.

In the play and interplay of competition that Deneen came to sense around him, the animals of muscle and bone were consistent victors against the other kind. It seemed to him that even the pale green vegetation was of a stouter, more enduring order, creeping up on the borders of the rubber growths, winning the battle for favored places in the sun. All this, the seeping of sounds and sights, the sense of the world about them, he told the woman as they sat by the fire of nights. The days slid by.

"What is impossible to understand by a scientific view," he said once, "is not the hoppers. As an amateur giving a poetic guess, they look as if whatever is back of the push of life has worked on this planet with material not so good and strong as the stuff it used on earth. They move and fight and carry on in a way that lacks power, but it isn't the question of values. Another planet, another way. These things are only weaker compared to the flesh and blood kinds. But how did bluejays, grouse, woodchucks, deer, get here? All the things I've seen are practically North American animals and birds. The resemblance, at least, are greater than the differences. The fish are finned, familiar things. Only one fact. There are few, if any, beasts of prey in this world. How explain this?"

The woman looked at him, the shades of firelight playing across her face. "I don't know, Alan," she murmured. "It's all so strange. So strange and unbelievable."

But such conversations after a time grew rare. The nature of things, of suns and starlight and the activities of the day, seeped into them, changing them subtly. The woman's dull despair lifted. They achieved a routine as Deneen's skill at hunting increased, and the spectre of danger died entirely away. Their great problem was to conserve the fire, to carry lighted embers from one day's camp to another. Deneen filled a big split nut with some sort of gray moss, and this held live coals for long intervals. He pondered much over the nuts. Cocoanuts, in every detail. Cocoanuts on another planet in another part of the Universe.

"Evolution is wrong! These things have a stamped pattern!" he muttered and gave it up. In the stress of his fight to live and travel, the half cocoanut was more interesting as a bearer of fire than a problem.

HIS clothes became rags. Days passed as in a dream. The lower edge of the woman's blue gown, cut across at her knee level, went to reinforce the tearing upper portions. The artificial curl over one ear was gone, and her hair grew down and swept over her face when the winds blew in the afternoons and they lay in the shade as two suns, moving farther apart in the sky, poured heat over the jungles and river. Once she commented on their appearance.

"You look like a wild man, Alan. And I—" a wistful

half smile crossed her browned face— "if Jim Gregory's mother could see me now!"

"Were you and Gregory engaged?" Deneen asked and hung upon the answer.

"No. I believe he asked me to marry him once. But not very seriously. We were never serious. The Gregorys were very rich, but—well, he was just a good friend."

"Poor Jim," she murmured a little later. "And you—I heard of you from uncle. Your father was his best friend. Of course I remember you," she continued brightening, as if the memory of conversational niceties came back upon her. "You were the famous All-American half back, Alan Deneen. A perfect animal, Uncle called you. That's why he selected you for that experiment."

"I hadn't been in New York two hours," muttered Deneen. "But he had previously written me quite a bit about it. I took up his offer because it was a sort of lark—and—" he shook his head. "Here we are."

So they talked occasionally when memories of another world would bubble up and break through the surface of adaption to the life they led. But that busy life of colors and sounds and action drew a web about them. The woman's dullness lifted. She continually watched Deneen. The days passed.

Deneen found a salt lick in the wood, and scraped enough of the precious mineral to flavor many a meal. Fruits were added to the diet as they topped the crest of the watershed which fed the river, and went down moving in slow marches into the lowlands beyond. Here they slept or lay idle most of the day, and traveled of nights and mornings. Deneen talked of a bow and arrow. Days passed, one by one. The jungles began to thin.

The woman grew close to Deneen. She clung to him when they crossed boggy, treacherous ground, was anxious each time he left her, and her eyes welcomed his return. Above them, like a reminder and a guide, for the first few days and sometimes several times a day, they had heard the shrieking fizz of the rocket ships passing high, invisibly high in the atmosphere, as if they knew of the accident which had nearly plunged one of the craft into a mountainside. But they stopped after a time. The man and woman in the jungle were troubled, but as the days passed they ceased to speculate about the absence of the sounds. Away from the river, Deneen went north. Facing the setting suns, he had pointed an arm in the direction where the ships seemed to be heading and called it north.

They went north. Days passed endlessly.

In Ruth Meredith there grew a need of rest. The constant exercise, alert lookouts, the nights in the open, gave her a splendid health. But she grew tired, tired of the eternal trek, of the futility of attempting to find something or someone to explain an utter riddle. She grew tender with Deneen and once, when he lifted her over a difficult place, slipped, and held her close, she laughed softly, deep down in her throat—a momentary laughter which held a message as old as life. Each camp she left more reluctantly.

Jim Gregory and her uncle were dead. She came to vaguely believe this. To even imagine otherwise was an effort, so great seemed the distance in time since she had seen them both run toward the rocket men on the mountain. Came days, many days, when they no longer heard the ships. The world seemed to be limitless, growth-clothed, dotted with lakes, laced with streams, utterly devoid of human life.

"We are alone, Alan, alone," she told him. Each day she busied herself arranging camp, and about the terribly rude implements they had, a notched stick to mark the days, the fire nut and another wherein they boiled meat by dropping hot stones into the water it held. About these things she wove the sentiments of home. Once she asked:

"Why not rest, Alan? Must we always go north? Perhaps there is no one there. How can there be anyone? And what if we did find these—these men? What if they killed you?" Deneen had looked into the close blue eyes. "They won't kill me, Ruth," he said slowly. "But we'll rest awhile. You're tired."

They built a camp where the jungle petered out to level land. The strain of travel gone, both had more time to think. In the course of a week Deneen made his bow and arrows. The moon had thinned and filled four times, and was filling again, riding the western sky. Their stick calendar bore fifty notches. Rested, Deneen felt stirring activity in his mind. "Fifty days," he told Ruth. "Four months by this moon. Both day and months are shorter than those we knew. And the year—what sort of year—" he shook his head. "That will take lots of observation—lots of time. But I'd bet on one thing. This globe circles that big red sun just like a moon. Both go around the little blue one. That seems the only explanation. For the two suns have spread in the sky, Ruth. The day is much longer, the night short. I wish Meredith were here!"

SHE came to him. It was night and the vast moon crescent hung over the line of jungle. She had been thinking for days since arriving at the break in the growths, where the plain stretched as far as the eye could see ahead, bordered quite sharply by the jungle wall to the left of them. They had heard no sound in the sky for what seemed ages to her.

She came close to the man, the glow of fire embers in her face. "It still seems impossible. Another world!" she said softly. "And my uncle, Alan! It came to me, all at once, when you talked. I wanted to stop—I was tired—weary. I didn't believe any longer that Jim and Uncle George were alive."

"I'm remembering, Ruth," Deneen said slowly. "What you said on the mountain. We cannot live like animals, eating, sleeping. We can never really forget. But you were right to doubt. Where shall we go now? Always north? What if there is nothing there?"

"But beasts, Alan. Greater beasts. I am always afraid. Last night I heard something heavy moving in the jungle."

"Why didn't you tell me?" asked the man sharply. "Why didn't you wake me?"

She bowed her head. Deneen's breath blew forcibly through his nostrils. They had changed, had drawn together. The woman was his by a law greater than any human institution, but the codes of another world like ghost voices in his heart still calmed the fires in his splendid body.

Their problem was a cosmic, immense one—it always seemed to Deneen that he had to find Meredith, to find men, to achieve some explanation. He had fenced everything out of his mind but work—concentrated all his energies into getting food that they might live, to . . . what?

The question came forcibly to him as he reached out a brawny arm and caressed the woman's cheek. They had lived, but gotten nowhere. The chances were thousands to one that they would not find the cities of the rocket men before other months and perhaps years had passed, and to find the exact place where Meredith and Gregory had been taken was an event of still greater improbability.

The woman came closer. "Alan!" She held his great arm. "Sometimes I do not care! If I knew that Jim and my uncle were dead, not needing us, I would not care to find anyone."

He took her face in his hands. The banked fire crackled in tiny snaps, the wind sang a low song in the jungle edge. "I've been lucky, Ruth," he said slowly. "This world is full of game, soft, helpless game. There are no big predatory beasts, and except for a few birds like owls, not a note of savagery—so far." He paused, released her, and reached over by the fire to pick up the bow he had made. "This is a powerful thing, Ruth. I've practiced with it for days. Even if—"

She watched him intently. "Alan—I saw you looking at the ground this morning on the jungle edge. I went to see myself. I saw the tracks. There are big beasts near this plain."

"We can't go back," Deneen muttered, his eyes on the fire. "We can't go back and live, without—"

"Why not?" The woman's voice was troubled. "Alan! There is no place to go. Life is harder here. Perhaps ahead of us there may be terrible dangers. How can we know we are any nearer to human beings than we were? My uncle and Jim—we cannot help them. Why can't we go back—to *our* country? Back in the hills by the river? I was wrong on the mountain. Alan—I'm afraid!"

Deneen put down the heavy, powerful bow. He gazed moodily into the fire and for a moment saw Ruth Meredith as she was being introduced to him in another world, smart and trim and sophisticated, with the well-groomed Gregory behind her, and places to go in the city of lights and laughter beyond the walls of the Worth Building.

This metropolitan girl, of a type supposedly as superficial as city glitter, had proven herself beyond every expectation. She had not failed in the stress of a terrible change. Her voice, her thoughts, were a woman's, devoid of frills, urging him to the making of what home they could, calling to him the old call of her sex, born out of the forces of life. Why should they go on? Why should he work toward ends that were shadowy and unreal?

Explanations—science. What was science? He looked at the huge moon crescent riding the sky. Meredith had died—a speck of matter gone. Of what avail the things Meredith had known? Where was the world of man with its knowledge and the arrogance of its cities spread beneath the skies? She wanted him to live, to go back—back to the tide-harried river to build a home on the hills.

Deneen turned. "Ruth!" he said and suddenly stiffened. The woman was gazing beyond the fire. "Alan! Look!"

Deneen twisted around, his hand searching the ground hastily and clasping the unstrung bow. Beyond the fires were two lambent, greenish eyes that moved, winked out, and appeared again cruelly glittering. Deneen reached over. "Those arrows, Ruth—quick!" The night air carried a low, cavernous growling. "Throw wood on the fire!" Deneen's great arms sprang to effort as he strung the bow. A rawhide string hummed a song of tautness as he rolled over past the girl, rose to one knee and fitted an arrow shaft. The beast in the shadows growled again as the woman threw wood on the fire. The banked embers broke and scattered, and the wavering illumination showed a shadowy form pacing in the gloom. The eyes appeared again, and Deneen released the bent bow. The twang of the rawhide string mingled with sudden snarls, a great thrashing. The eyes were gone.

Deneen slowly rose erect, a barbaric figure in the growing light of the fire. Ruth ran to him. "Don't go, Alan! Don't leave me!" She was in his arms, the licking, rising tongues of flame between them and the jungle edge.

Deneen yielded to the frantic woman. "Looked like a wolf!" he muttered, stroking her hair. "Not very dangerous. That's all right, Ruth. I won't go out. We'll build up the fire."

THE red tongues licked over fresh wood and snapped their message of protection. But no other prowlers disturbed the camp. Deneen held the woman in his arms. The moon hung over the jungle. Her fear passed. The man watched the firelight play over her upturned face. His woman. "Alan!" the murmur was low. "Alan!" Her hands caressed his shaggy hair, clenched slowly as his arms tightened. The wind sang an old song.

Morning disclosed a grayish, brown shape stiffened out by a clump of low bushes. An arrow half protruded from the beast's neck. Deneen turned it over and nodded. "A big timber wolf. I tell you, Ruth, this is growing to be the most significant aspect of one situation—the repeated appearance of the things we knew."

She was silent as he worked to draw out the arrow. Then—"Alan—we're going back?"

Deneen rose. His steely gaze went out over the plain, swept in a short circle to the campfire, the rude shelter they had built, the crude utensils in front of it. Then to the woman's face. Something struggled within him. And even as his decision balanced, there sounded a growing, shrieking fiss in the sky. Over the jungle, streaking past, vanishing into space out where the plain stretched to the horizon, shot one of the long-delayed rocket ships like a message from the past. Deneen's head shook.

"Ruth—we can't. All last night I lay awake thinking, thinking. We can't forget. Can't live our little lives from day to day, back in the condition where the race of men began, with a jack-knife and two watches to remind us of the point the race of men had reached. I know," he added as her eyes clouded. "Ahead there may be danger. Back there, safety. But with what? Nothing. We can't forget, Ruth. The rocket ships will pass over us and I will never be content. I feel things calling—calling. Where are those ships going? Who's in them? What, after all, of the riddle? I am Alan Deneen, you Ruth Meredith. We musn't forget."

She bowed her head. "I know, Alan. You want to see people again, to hear them talk, to be part of something bigger than this. But what if— I'm afraid. I'm a coward, Alan. My memories are dim."

The man talked in low tones. He named the lack of proper utensils, the primitive food. "We'll never be able to make anything like a human home, attain to human cleanliness!" he growled. "Though we worked our hands

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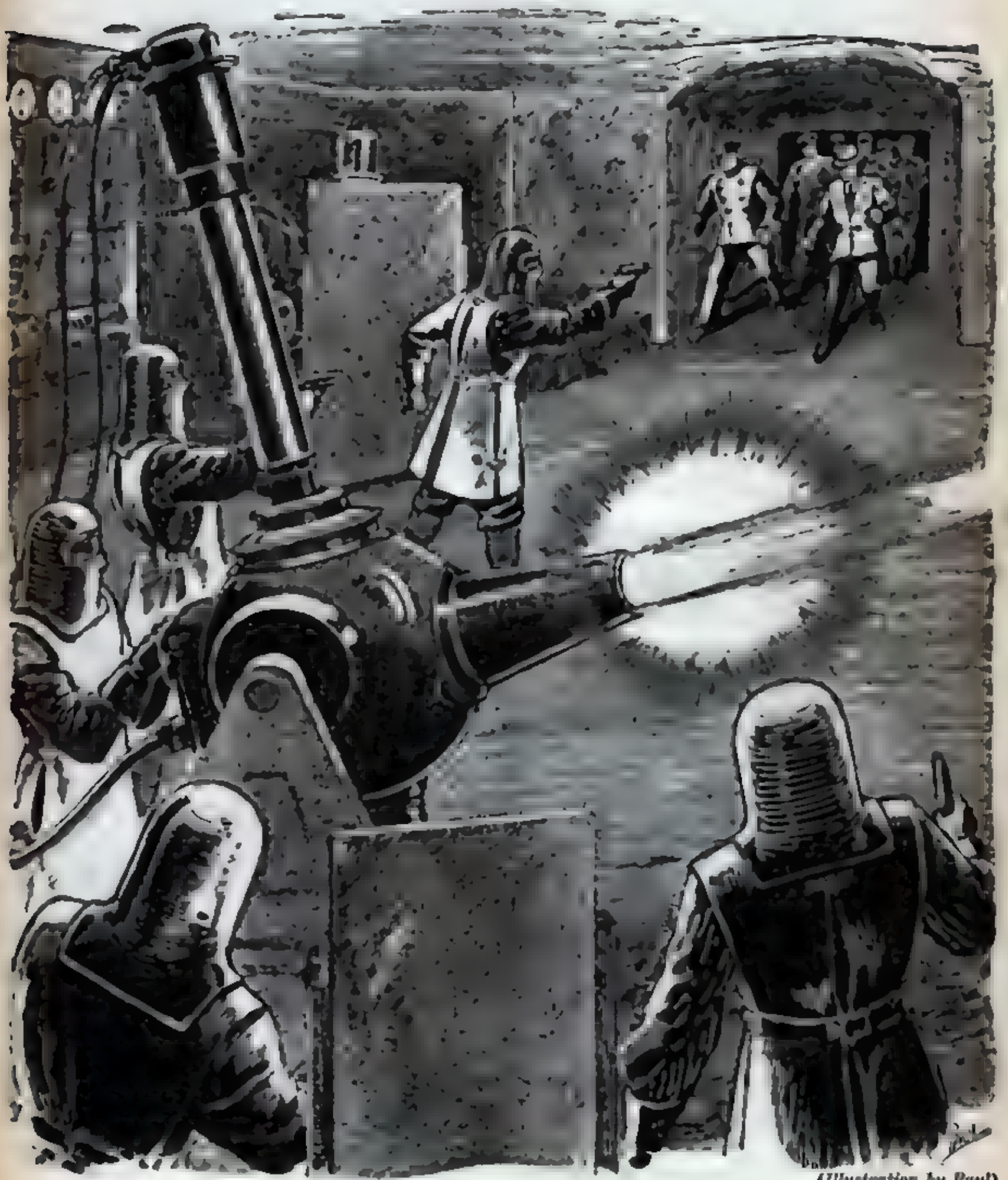
VANISHING GOLD

By Capt. S. P. Meek



(Illustration by Paul)

The attention of the men was on a half dozen grotesque figures facing them. They were attired in a sort of medieval armor. Their hands held revolvers menacing the attackers.

VANISHING GOLD

by the author of "Trapped in the Depths," "The Tragedy of Spider Island," etc.

A STEEL-GREY limousine rolled west along Fulton Street in New York City. As it passed the corner of William Street, a powerful touring car with its curtains drawn drew abreast of it and crowded it toward the curb. The driver shouted a warning but his voice was drowned in a burst of noise. From behind the curtains came a tongue of orange flame and the air resounded to the rapid tattoo of a sub-machine gun.

As the firing started, Dr. Bird moved with the swiftness of a striking snake. With one hand he swung behind him a slim, dark-haired girl who had been his fellow-occupant of the rear seat, while his other hand darted momentarily under his coat. It reappeared gripping an automatic pistol. He raised the weapon but Operative Carnes of the United States Secret Service gripped his wrist with a vise-like grip.

"Don't shoot, Doctor," he cried, his voice rising above the din. "We're safe in here against anything short of artillery."

Dr. Bird allowed the hand holding the gun to drop and a smile spread over his face. The touring car, its mission finished, tore away up William Street with wide-open motor. The driver of the limousine turned as if to follow it.

"Go on to the bank," said Dr. Bird as he slid his unfired pistol back into its shoulder holster. "Thanks for stopping me from shooting, Carnesy, old dear. If I had turned loose a few bullets, things would have been unpleasant in here. I forgot for a moment that we were riding in one of the armored cars I fixed up for the Federal Reserve Bank. A half inch of vitriolene will stop any bullet ever made, as we have seen."

"And looking like glass, will fool anyone, as we have seen, Doctor. I'm glad you had this car meet us, for I anticipated no danger this soon, especially as we left Washington secretly."

"Saranoff never looses any time, Carnes. However, it looks like we had a traitor in our forces back in the capital. I'll look into that when we return."

As Dr. Bird leaned back, the girl whom he had thrust behind him looked up into his face, a soft glowing in her eyes.

"Thank you, Doctor," she said quietly.

"Eh? What for?" demanded Dr. Bird.

"For trying to protect me when you thought we were in danger. You interposed your body as a shield for mine."

Dr. Bird's keen eyes bored into hers.

"Miss Andrews," he said shortly, "Curb your imagination. You were in my way when I drew my weapon and I thrust you aside. Why should I strive to protect you? My life is immensely more valuable than yours in this war with Saranoff. If I had used anyone as a shield, I would have interposed your body before mine."

"Yes, Doctor," said the girl demurely, but a twinkle persisted in her eye. Carnes chuckled softly to himself, but kept his face an expressionless mask. The car rolled on and halted at 33 Liberty Street. As it stopped, a bare-headed official of the Federal Reserve Bank came out to meet them.

"Dr. Bird?" he asked. "I am Wiggan, Governor of the Bank. I hope you had a pleasant trip here."

"Very pleasant and a warm reception," said the doctor dryly. "This is Operative Carnes of the Secret Service and Miss Andrews, my assistant. Will you lead us direct to the vaults?"

"Surely, Doctor," replied Wiggan as he turned away.

He led the way to the loading concourse, Dr. Bird and Carnes, each carrying two large suitcases, following him. As they entered the elevator, he turned to Dr. Bird.

"Will you go first to the coin vaults or to the bullion vaults?"

"To the bullion vaults."

He spoke into a telephone in the car and they started down.

"There is no operating handle in the car," he explained. "All of the vault elevators are operated from a central control-room on the lower floor. The men on the loading concourse have no idea where this car will stop. In case of trouble, all elevators can be stopped and the vaults isolated as there are no stairs. Here we are."

They stepped from the car into a brilliantly-lighted corridor, eighty feet below the street level. Three men in civilian clothing met them and led them along the cor-

CAPT. S. P. MEEK

IT has been many months since we have published one of Captain Meek's realistic and exciting tales of scientific wonders. With the world in chaos over the gold standard, and half the nations on the verge of financial bankruptcy, the value of the gold in a nation's treasury may determine the prosperity or poverty of its citizens. But suppose that gold were slowly, imperceptibly, but surely to vanish, to evaporate into the thin air? What would happen if no known cause were found, and no remedy could be provided?

Surely here is a scientific mystery of the first order, a mystery in which the keenest brains of modern men would have to be pitted to avert an international disaster. Capt. Meek's scientific detective turns his mind to this question with astonishing results.

ridor. They passed through a succession of barred doors which were opened for them by armed and uniformed guards who stood beside them. At length they came to a huge vault door equipped with time locks which was now rolled back on its massive hinges. Barring their way was a grilled door. Their three guides stepped forward one at a time, and inserted keys they carried into three locks on the grill. The third man, as he unfastened his lock, swung open the door. Mr. Wiggan called and two men emerged from one of the doorways which lined both sides of the corridor in which they found themselves.

"Mr. Kennedy, the cashier, and Mr. McNary, the bullion teller," he announced. "This is Dr. Bird from the Bureau of Standards."

Dr. Bird shook hands with each of them, his keen eyes taking their measure.

"I'm glad to know you, gentlemen," he said while a rare smile lighted his face. "I imagine this thing has worried you a good deal."

A heavy load seemed to be lifted from the minds of the two men as they looked into the face of the famous scientist and felt the clasp of his slim tapering fingers, the fingers of an artist and a dreamer, yet with muscles like steel wires concealed beneath the acid-stained skin which covered them. Men usually felt relieved when they could unload their troubles onto the broad shoulders of the six-foot-two scientist who stood before them.

"WORRIED is no name for it, Doctor," cried McNary impulsively. "It has driven us nearly nutty to sit here and watch our gold evaporating into thin air like that dry ice they pack ice cream in."

"Are the blocks shrinking?" demanded Dr. Bird sharply.

"No, sir," replied the bullion teller. "That is the most uncanny thing about it. They are staying the same size, but they're losing weight."

"How much weight have they lost?"

McNary consulted a slip he held in his hand.

"We first noticed it the day before yesterday," he said. "I received orders to pack a shipment for the Philadelphia Mint. As a matter of routine, I started to weigh the bars. I weighed the first one, it was a bar of Rand gold from South Africa. It is put up in pigs worth four thousand pounds sterling, about nineteen thousand, five hundred dollars. Well, the first block was a trifle over five hundred dollars short."

"What did you think?"

"That my balance or weights were out of order. You see, every bar is repeatedly checked in transit and its weight is checked three times when it is received here, so I thought it couldn't be short. I had a scale which had just been tested with the master weights and a set of weights which had just come back from their annual check at the Bureau of Standards. I used them and got the same result. Then I called Mr. Kennedy."

Dr. Bird glanced inquiringly at the cashier.

"I came down at once, Doctor," he said, "and verified McNary's weight. I sent for the master weights and again verified it. I at once weighed nine other bars of the same shipment and they were all about the same amount underweight. Next I weighed a couple of bars from the New York Assay Office on which we had their weight as well as our own. Each bar I weighed was a trifle less than 3% short in weight, 2.927%, to be exact."

"Go on," said the doctor, his eyes glittering.

"McNary and I weighed every bar in the vault. Each one was underweight. At first the percentage was 2.927% in each case, but soon it became 2.928% and then 2.930%. The longer we weighed the higher became the percentage. Then we went back and reweighed the first bars. To our horror, they were then 2.941% underweight. That was when Mr. Wiggan telephoned the Secretary of the Treasury and received the cheering news that you would be sent here. We weighed a bar a few moments ago and the shortage is now 3.001%."

Dr. Bird's eyes held the peculiar glitter which Carnes had long ago learned to associate with excitement and keen interest. Nevertheless, when he spoke, his remarks were wide from the subject of gold.

"You swim a good deal, Mr. McNary?" he said with his engaging smile.

The bullion teller looked surprised.

"Why, no, Doctor," he answered. "I can't swim. I haven't been near the water for a year."

"You should," replied Dr. Bird. "It's a wonderful exercise. I thought from the way your hands and face were peeling that you did."

McNary glanced at his hands. They were red and rough with fragments of skin loose on them.

"That's not sunburn," he said. "It's some sort of a rash. It was quite severe about a month ago, but it got better until about three days ago."

"It must be painful under your wrist-watch strap," hazarded the Doctor.

"No, Doctor, it isn't. In fact, I hadn't noticed it at all there."

He unfastened his watch and took it off. The skin under the watch and strap were perfectly clear. Dr. Bird examined his wrist with interest.

"It looks like ivy poisoning, doesn't it?" he said. "I'd try an ointment containing lead sulphate and zinc oxide if I were you. Smear it on good and thick and leave it there all day."

"Thanks, Doctor, I will. It itches a little."

"Take care it gets no worse. Now let's look at that gold."

McNary led the way into the first of the little cells opening off from the corridor. Shelves were built about three sides and on them lay in even rows, ruddy bars of gold. A tag tied to one of the shelves read "N. Y. Assay —99.9 fine—$75,455,720." The outer end of each bar was stamped with a number.

"These are from the New York Assay Office," explained McNary. "We have the original tally-in sheets and the Assay Office weights."

Dr. Bird picked up one of the bars and hefted it. It was about the size of a brick.

"About twenty thousand?" he asked.

"Yes, sir."

He returned the bar to the rack and glanced at a balance which stood on a wheeled table in the center of the room.

"Your balance is doubtless correct," he said, "but we might test it."

He opened one of the bags he had bought and took out a set of finely-polished weights. He laid a bar from the rack on one pan of the scale and added weights until a

balance was reached. He counted up the weights and referred to a typed list which Kennedy handed him.

"A little over three per cent light," he said.

He removed the bar and piled on the pan weights which he took from the set lying on the table. When the two pans were in balance he counted up the weights on each side. The two results were the same. He transferred the weights from one pan to the other and again the scale balanced.

"That eliminates one possibility of error," he said musingly. "There doesn't seem to be much that I can do here, but I'll make a few simple tests."

He opened another of his bags and took out a piece of apparatus. It consisted of three tubes arranged at angles of 120° to one another and joined to a central body. He fitted an eyepiece to one tube and arranged before the second a small battery light. At the end of the third he attached a tiny arc light, the terminal wires of which he connected to a long tube containing a little mercury at the bottom.

"Just an arc spectroscope," he said in answer to the inquiring looks of the bank officials. "Now, Mr. McNary, will you kindly screw this plug into the socket from which you will remove that bulb?"

Helpless

HE pointed toward an electric light in the ceiling. McNary mounted a chair and inserted the plug. From it a cord led to the mercury-containing tube. Dr. Bird rocked the tube gently back and forth until a buzzing hum filled the air while weird streamers of greenish light came from the tube.

"A mercury arc rectifier," he said. "Your current is A.C. and an arc takes D.C., you know. Now I'll shoot an arc across an enclosed gap filled with nitrogen and see what happens."

He looked through the eyepiece for a moment without comment. He opened a valve in the tube enclosing the arc and changed the gas surrounding it with a hand-pump, replacing the nitrogen with air from the room. Again he glued his eye to the instrument.

"You might take a look," he suggested.

Brilliant lines and bands of light filled the space on which the eyepiece was trained. One brilliant orange line stood out with uncanny brilliance, dominating the spectrum.

"Did any of you ever study spectroscopy?" he asked. "No? Too bad. If you had you would better appreciate that spectrum. Its great intensity is due to an improvement I recently made in the instrument. That orange line stood out well, didn't it. That is the characteristic line of helium."

"Helium?" asked Wiggan. "The stuff they fill balloons with?"

"The same. It's quite an interesting element. First discovered by Lockyer in 1868 as an orange line in the sun's spectrum. Isolated by Ramsay in 1895 and so on. Used for dirigibles because it is non-inflammable, but more interesting because of its occurrence in radioactivity phenomena. Quite interesting. I'll make a few more tests and then I'll be through here."

He snapped off the arc light and took from his bag a box-like piece of apparatus, one end of which he pressed against the block of gold he had been weighing. He looked in the box for an instant and then applied it to another bar.

"It shows in the fluoroscope," he said, half to himself. "It's unprecedented but it's true. Not much use to make any further tests, but I might as well make sure."

From his bag he took two thin sheets wrapped in black paper. Without unwrapping them, he laid one on each of the two bars of gold he had tested. He allowed them to remain for a few moments and then returned them to the bag.

"Replace the light, please," he said. "Miss Andrews, kindly repack this apparatus and set up the short-wave detector."

The girl busied herself at the task and Dr. Bird turned to Wiggan.

"Mr. Wiggan," he said, "I have bad news for you. Your gold is slowly disappearing at a steady rate and will continue to do so indefinitely, unless I can determine the cause and counteract it. That may take me a day and it may take me a lifetime. Meanwhile, nothing can be done."

"But, Dr. Bird," protested the governor, "that seems impossible. Gold doesn't disappear like that. We have gold ornaments made six thousand years ago and they still exist. Why, if you are right, this gold will wholly disappear in a few weeks."

"No danger of that. It will drop to half value in a definite time, say one year. In the following year, it will lose half of the remainder and so on. Just what the period of loss to half-value, speaking not of dollars but of chemical radioactive value, I will have to determine. Of course, there has been no theft in the ordinary sense of physically removing the gold and carrying it away, but it is going, nevertheless. Miss Andrews, is that detector connected yet?"

"Yes, Doctor."

Dr. Bird turned to an instrument resembling a wireless set and put on a pair of headphones. He manipulated a series of dials and listened.

"Nothing," he said. "As I expected. Repack it, Miss Andrews. Now, Mr. Wiggan, I have done all I can here. It is probably needless for me to impress on you the need of absolute secrecy. If the public learned of this, it would precipitate the greatest panic in history. If this condition becomes widespread, it means the end of the gold standard for the world and a new standard of values. Before such a thing becomes generally known, the heads of the world's governments will have to make plans to avert widespread disorder and revolutions. You understand that, do you not?"

"Assuredly, Doctor," replied the governor, his face white.

"Meanwhile, I have been studying two bars. One I will take with me. I cannot perform the tests needed with a traveling laboratory. I hope to find proper facilities at Columbia University, if not I will take it to Washington. The other I will leave here. Mr. McNary, you will weigh this bar once an hour and keep a record of the weights. These records I will get by telephone. Meanwhile, admit no one to the vaults."

"But surely there is something we can *do*, Doctor," protested the governor. "It is inconceivable that ruin will

overtake the financial structure of the world. What is the cause of it?"

"That is what I am going to try to determine, Mr. Wiggan. In the meantime, you can do exactly what I have said and nothing more. What science can do will be done. When I admit defeat, you can act by calling a conference of financiers of the world, but not before. Right now, secrecy is the word. I will be at the Pennsylvania Hotel if you wish to communicate with me. Come, Carnes; come Miss Andrews. We must get to work."

As they emerged from the bank a strident-voiced newsboy greeted them.

"Extra! England Abandons Gold Standard! Big Gold Shortage! Extra!"

Dr. Bird snatched a paper from the boy's grasp and thrust him a coin. With glittering eyes he ran through the story.

"Thank God!" he muttered as he saw that the news he had feared was not in the story. "It's still a secret, although I have no doubt that the real cause is what we have just seen. Get the car, Carnes, and we'll go to the cable office. I must send a code message to the Bank of England at once."

FROM the cable office they drove to the Pennsylvania Hotel where a suite had been reserved for the doctor and his party. As soon as they had put their bags in their rooms, they gathered in the sitting room for a conference.

"This problem must be attacked from three angles," said the doctor, "and each of us has his part to play. Mine is the scientific side. I will try to find out what is making this gold behave as it is and, if possible, a way to stop it."

"What could have happened, Doctor?" said Carnes. "Like Mr. Wiggan, I always thought gold was an absolutely stable substance."

"It has always been so considered, Carnes. I can tell you what has happened, but not how it happened. Through some unknown cause, this gold has become radioactive and is steadily disintegrating into some baser element, possibly copper, as radium changes into lead. I have an inkling as to how it was done too. You know that all atoms are composed of a center with many electrons revolving around it? Well, by some means the orbits of these electrons have been changed so that they are flying off. I detected the alpha rays of radium, which are atoms of helium, by means of the spectroscope, and the beta rays, which are electrons, by means of the fluoroscope.

"The gamma rays have not been identified positively, but from the burns on McNary's hands and face, I am sure they are present. If they are, the photographic plates which I laid on the gold bars will be exposed through the black paper which covered them. The action was doubtless caused by some sort of disharmonic ray which jolted the electrons out of their stable orbits. The process is continuing without further applications of external force, like radium. I will try to find the method used and, if I can, a means of reversing, or at least stopping the process.

"Now for your part, Carnes. Start lining up the members of the Young gang in New York and having them shadowed. I have little hope that you will get on the trail of Saranoff himself, the mere fact that such a crude attack as a machine gun was used on us indicates that a subordinate is in charge here. However, I hope you can locate their headquarters.

"As soon as you have got this going, get hold of Wiggan and make the rounds of every vault in New York where gold is stored to any quantity. In each vault test one or more bars with a fluoroscope and have it weighed. If you find any that are fishy, telephone me at Columbia University. Do you understand?"

"Perfectly."

"Then get going. Miss Andrews," he continued as Carnes left the room. "I am going to give you a more active part than I have in the past. Once before you penetrated into the secret haunts of the Young gang in disguise, fooling even the great Saranoff himself. Can you do it again?"

"If they don't remember me from last time, Doctor. I'll take a different disguise, but some trait may give me away."

"That's a risk we must take. Get into disguise and see what you can find out. Report to me when you have anything important if you can, but take no risks."

"All right, Doctor, I'll do my best."

"All right, get going. I'm off for the University."

He picked up two of his bags and left the room. Thelma retired to her bedroom, stripped off her clothing and started to work. An hour later a young workingman made his way down the hall. In the lobby he cast a swift glance around and then boarded a car going downtown.

Dr. Bird was driven to Columbia where he interviewed the head of the chemistry department. Ten minutes later he was furnished with a private laboratory and two assistants. He plunged into his work, his helpers watching goggle-eyed as he swiftly and surely manipulated delicate apparatus with his long mobile fingers. At the end of three hours he went to a telephone. In five minutes he was talking to the Bureau of Standards.

"The next mail plane leaves in an hour," he said, "and I want Lloyd on it. Have him report to me at the Pennsylvania Hotel. Next get ahold of O'Brien, my technician, and tell him to start work at once on some ultra-sensitive short-wave detectors. Have them built on the D'Arsonval galvanometer principle. The plans are in file A-11 in my office. Patten has the keys. Here is one modification I want made . . ."

The talk drifted into technicalities. Ten minutes later Dr. Bird ended his talk.

"You understand just what I want, do you? Tell O'Brien to hurry. I want twelve eventually, but send them down to me by messenger as soon as one or two are ready. Has anything new come up? No? All right, hurry."

He returned to the laboratory and plunged again into his involved experiments. At last he raised his head from the microscope through which he had been studying a gold shaving.

"I've got to leave," he announced. "Carry on along the lines you are working on. A man will be here later to take charge. He's both a high-grade physicist and an instrument maker and he'll modify some of this apparatus and make finer readings than I have been able to do. Gray, as soon as you finish that analysis, take a fresh sample from the bar and repeat it. The results may surprise you. Note the exact time you take the fresh

sample. Telephone your results to me if I am not back or if Mr. Lloyd isn't here. Good-bye."

The Approaching Crisis

AT the hotel, he found Carnes waiting. In his hand he held a yellow envelope addressed to Dr. Bird. The doctor ripped open the cable and decoded it swiftly.

"Carnes," he said as he finished, "unless my experiments are successful, the gold standard is doomed. The gold in the vaults of the Bank of England has undergone a three percent shrinkage already. That was the real reason for the abandonment of the gold standard. Saranoff struck simultaneously in two continents. Now, what did you find out?"

"Very little, Doctor. I have four known Young men under close surveillance, but their movements are not suspicious. I have the city authorities coöperating with the federal men."

"That's splendid, old dear. What about the banks?"

"We visited the Assay Office and four banks. All of the gold was perfectly normal. I tested two bars at each place. We were too late to get into any more vaults as the time-locks were set, but we'll get into them in the morning. No one had any suspicion as to what I was about."

"That's good. Go ahead along the same lines tomorrow. I hope that something breaks soon. Unless Saranoff moves again, there is no hope of getting on his trail. You haven't heard from Thelma, have you?"

"No, I haven't. Where is she?"

"Out in disguise trying to locate something."

"I don't like the idea of that, Doctor."

"Rats, Carnes," laughed the doctor. "Are you getting hopped up on suspicions of Thelma again? She has proved herself enough, I should think."

"It's not that, Doctor, I was thinking of the danger for her."

"Wouldn't you take that chance if you could?"

"Certainly, but that's different. She's . . ."

"One of my assistants. Each of us does what he is best fitted for. I couldn't do her part any more than you could do mine. I don't enjoy sending her into Saranoff's den, but it was necessary. Have you had supper?"

"Yes, but I hadn't much appetite. I trailed around with the health squad part of the afternoon. By that means I got into places without arousing any suspicions, but the sights I saw ruined my appetite. Did you ever see a case of leprosy?"

Dr. Bird sprang from his chair, his eyes glittering.

"What do you mean?" he demanded.

"Why, I saw my first case this afternoon. A fine young chap, an express messenger. He was reported by a clinic where he went for treatment and the health squad took him up this afternoon."

"Describe the lesions. Were they on his hands?"

"Yes. The skin was all dead and loose, ready to peel as if it had been badly burned, only there was no burn under it, just a dead-white flesh which was already semi-putrid with red pimples rising through the dead-white matter."

Dr. Bird grasped his hat.

"Come on, Carnes!" he cried. "I've got to see that man at once. It may be the clue we have needed."

The astounded detective followed the doctor into the hall. As they hurried down the corridor, a pale young man with thick glasses met them.

"Hello, Lloyd," cried the doctor, "you made good time. Had supper?"

"No, Doctor."

"Come along and grab a bite and I'll talk while we're eating. I want you to hustle right out to Columbia and take charge of some work."

In ten minutes Dr. Bird had managed to eat a sandwich, drink six cups of black coffee and outline to Lloyd the work he wanted done. Without waiting for his assistant to finish his meal, he dragged Carnes out of the restaurant and into the waiting car. In half an hour they were at the detention hospital examining the leprosy-stricken messenger. Dr. Bird took a swift glance at the lesion and emitted a snort of disgust.

"Did you ever see a case of leprosy?" he demanded of the attending surgeon.

"This is the first, Dr. Bird."

"Your first is yet to come. This is a typical case of second degree radium burn. Get Dr. Smythe of Bellevue on the line and ask him for a consultation. He is an expert on that line."

As the surgeon left the room, Dr. Bird turned to the messenger.

"When did this first hit you, Flaherty?" he asked.

"A week ago last Monday, sir. I had a redness and itching on both hands that night, but I smeared it with salve and thought that would cure it. It got worse, although the red disappeared, but it itched. Then the skin began to peel and I went to the clinic. Then they brought me here."

"You'll be out of here as soon as Smythe sees you," replied the doctor. "Did you handle any unusual package that day? One, for instance, that seemed unusually heavy for its bulk?"

"Yes, sir," replied the messenger in a surprised tone. "There was one package that was quite heavy. It was a cube, about two inches on a side and it must have weighed nearly two pounds. I thought it was gold."

"To whom was it consigned?"

"I'm not sure. It was 'Semensky' or some such name."

"Good!" cried the doctor. "That's a starting point. You'll get along all right, Flaherty. Don't worry. This is an occupational disease and I'll see that the express company continues your pay and takes care of your doctor bills."

As they left the hospital, Dr. Bird turned to Carnes.

"That's the loose end that every criminal leaves," he said. "Run down that package. Find out who sent it and from where, and who received it and where he is. When you locate him, put him under constant surveillance. That little package contained radium salts encased in lead, which accounts for the weight. It holds the solution of the entire mystery. Get going. I'll go back and see if there is any word from Thelma."

THERE was no word from the girl and Dr. Bird turned to the telephone and gave the number of his private laboratory in Washington. Somewhat to his surprise, the call was promptly answered.

"Who is this?" he asked, "O'Brien? Fine, the very man I wanted. I'm sorry but I'm going to have to push

you on that work. Things are due to break loose here any minute and I need those instruments."

O'Brien laughed.

"I've worked for you long enough to know when you're in a hurry, Doctor," he said. "I have four men working now and we'll have three ready for shipment by morning."

"Good boy!" cried the doctor. "I knew I could depend on you."

He threw himself, fully clothed, on the bed to think. Despite the coffee he had drunk, he was sound asleep in a few moments. It was broad daylight when Carnes awoke him.

"Thunder!" he cried in a voice of chagrin. "I've slept all night while everyone else was working. What news?"

"Bad," replied the detective as he dropped wearily into a chair. "That package was shipped from Charleston by 'Peter Sewillski.' He identified himself by his signature and claimed the package here himself. I got a description of him and half the New York police are looking for him, but they'll have no luck. He had a luxurious beard, wore tinted glasses, both of which were of course fakes, and wore extremely heavy gauntlets despite the warm weather. He carried a small satchel which seemed to be very heavy and he walked with a slight limp in his left leg."

"Saranoff!" cried Dr. Bird.

"It sounds like him, especially the limp. If it was, the police will never find a trace of him. What word from Thelma?"

"None."

"I hope she's all right," exclaimed the detective in worried voice.

"So do I," replied Dr. Bird. "The fact that we have no word makes me think she is safe and on the trail of something. Now I'm going to get a shower. Order me up some breakfast and then turn in. You need a rest. I'm going to Columbia and see how Lloyd made out. By that time some instruments I sent for ought to be here and I'll go the rounds of the banks myself."

The scientific work was progressing to Dr. Bird's satisfaction. Lloyd presented him with a tabulated mass of data over which he pored intently. A telephone message to the Federal Reserve Bank gave him the data which McNary had collected and he compared the two sets of figures.

"It ties in nicely," he said. "Now, Lloyd, get some rest. There is no rush for a day or two now."

Half an hour later he entered his hotel and found a man waiting.

"Hello, Forsythe," he cried cheerfully. "Have you got those galvanometers for me?"

"I have four, Doctor," replied the messenger, indicating two large packages on the floor.

"Fine! Now I'll get hold of a man and we'll go out and set them up."

The rounds of the vaults of the dozen largest banks in New York failed to disclose any gold which was acting abnormally. In the vaults of the National City, the Chase National, the Bowery Savings Bank, and the New York Assay Office, which alone had over a billion and a half of gold in its vaults, Dr. Bird and Forsythe set up their instruments. They consisted of a delicate coil with a tiny mirror cemented on it, suspended on a quartz thread. Above the case containing the coil rose a loop of wire attached to what looked like a radio receiver. The whole was shielded by lead plates.

"That's a D'Arsonal galvanometer," he said. "It will detect a current as small as .0000000000000001 ampere. As soon as a wave of extremely short wavelength hits that loop, the galvanometer will turn. This will throw a reflected spot of light on a photoelectric cell and start a motor which will turn the loop until the received current is at a minimum and then disconnect so that the reading will remain after the initial source of external energy has ceased. Thus I can get the direction of the source of the exciting wave. If anything hits this gold, I'll know where it comes from."

There was still no word from Thelma that night, nor could Carnes, who had wakened in the afternoon find any trace of Peter Sewillski. The following morning Forsythe reported with four more of the instruments which O'Brien was constructing at Washington. Dr. Bird installed them in the vaults of four other banks and the following day, four more. He daily inspected all of them, but they showed no reading and they settled down to await the next move of their enemy. The doctor worked steadily with Lloyd; and while his tests confirmed his first hypothesis, he was unable to find a method of reversing or stopping the disintegration. And daily the gold in the Federal Reserve Bank grew lighter!

A week passed and still Carnes could find no trace of the man he sought and no word came from Thelma Andrews. The great city had swallowed her, and even Dr. Bird's face grew grave at her protracted silence. At last the wearying inactivity ceased. As Dr. Bird entered the vault of the Assay Office, he gave a cry of excitement. The loop had turned through an angle of approximately thirty degrees.

"The trap is sprung, Carnes," he cried.

With a protractor he measured the new orientation of the loop with the utmost care. When he had finished, he had a scale brought and weighed a bar of gold. It was .008% lighter than its record card showed. Cautioning everyone to utmost secrecy, he hurried to the Chase National Bank.

Again he found that the instrument had moved and the gold in storage a trifle light in weight. He measured the orientation of the second instrument and hurried to the National City. The instrument there was not affected, but in his rounds he found two more which were. With the data he had assembled, he laid out four lines on a large scale map of the city. Each line started from the location of one of the instruments and its orientation was that he had read with his protractor. The lines converged, marking out a small diamond in the northwest corner of Central Park.

"There must be something wrong, Carnes," he said.

He checking the laying out of the lines, but the result was the same. Jumping into a car he visited the four vaults and remeasured the set of the instruments. His measurements checked the first ones.

"We'll look in the park in any case." he said.

Underground!

THEY drove to the park and located the spot from which the instruments said the mysterious impulse had emanated. It was an open patch of grass, badly cut up,

and with four marks as though a heavy table had been set there. Dr. Bird looked at the marks and cursed.

"We're beaten, Carnes!" he said bitterly. "Saranoff was too smart for us. His apparatus is a portable one. That means that there isn't one chance in a thousand to catch him by scientific means. It all depends now on you and Thelma. You've drawn a blank and where is she?"

"Where is she?" echoed Carnes with a sinking heart.

There was no answer to his rhetorical question. The combined resources of the New York police department and the federal agencies failed to find a trace of the girl. She had vanished as thoroughly as if she had left the earth. Dr. Bird, after a moment of disappointment, threw himself with his customary vigor into the new problem presented.

"I'm going to station men whom I can trust at each instrument," he said to Carnes. "In this way, we can get a reading as soon as one reacts. We'll plot the lines and be ready to proceed with a car to the indicated point. Our success will depend on absolute secrecy, for two lines must be plotted to get an intersection. If Saranoff suspects our plan, we're sunk for he'll strike only once from a location. I hope his success will lull him into a sense of security."

A sharp knock sounded at the door. At the doctor's call, a bellboy entered and handed him a grimy bit of paper on a tray.

"This was left at the desk for you by a newsboy, Doctor," he said.

Dr. Bird took the paper and glanced at it.

"Quick, Carnes, get that newsboy!" he cried. "It's from Thelma."

As the detective left the room at a run, Dr. Bird smote his forehead with his clenched fist.

"Idiot!" he stormed. "Triple-dyed idiot! I deserve to lose. After all my experience with Saranoff, I forgot how fond he is on underground operations."

He read the paper again. On it were four words: "Under Central Park, Feodrovna."

Carnes reëntered the room with a rueful countenance.

"He was gone," he said, "and there's no way of tracing him."

Dr. Bird silently handed him the note. Carnes glanced at it and started.

"*Under!*" he cried. "Doctor, why didn't we think of that?"

"I don't know, old dear," replied Dr. Bird. "Just because we're too dumb I guess. We'll take turns kicking one another later when we have time. Right now we've got to hustle."

He led the way downstairs to where the vitriolene-armored car which he had used continuously since he arrived in the city was waiting.

"The City Engineer's office!" he cried.

A few words from the doctor and the sight of Carnes' gold badge secured them access to the files of maps in the engineer's office. They got out a detailed map of the underground passages in the Central Park sector and pored over it. The section of the park which the instruments had shown as the center of the disturbance which had affected the gold was bare of any marks other than a six-inch conduit through which a street-lighting circuit ran.

"The devil!" cried the doctor. "We're stymied again!"

"Maybe your readings were wrong," suggested Carnes.

"Possible, but unlikely, old dear. That was where we found the marks above ground, you know. Either there is something this map doesn't show, or he has opened a cavern. He has instruments to do it, you know."

"In which case it is a hunt for a needle in a haystack," said Carnes in a discouraged voice.

"What's the trouble, gentlemen?" asked the file clerk.

"There ought to be a hole under here and none is shown."

The clerk thought for a moment.

"That's the map of the 1908 survey, corrected to date," he said. "Let me get an older one."

He prowled through the files, unearthing map after map of the sector. Each showed a blank. With a chuckle of triumph, he brought out a map dated 1906.

"Look here!" he said.

On the old map was the clear indication of a tunnel running diagonally across the park and passing under the exact spot where the doctor's lines had crossed.

"That tunnel's there!" declared the clerk. "When they made the 1908 survey they left it and a lot more out because they couldn't find them. It is probably on a different level than most and the surveyors were too lazy to hunt it out. Yes, sir, there's your tunnel."

"Bring me some tracing cloth!" snapped Dr. Bird.

He rapidly traced the pertinent portion of the old map and thrust the cloth into his pocket.

"If that tunnel's there, and we know very well that it *is* there, we'll find it," he said grimly. "Carnes, arrange for a detail of thirty men for tonight. Have ten of them report to me at Central Park at midnight. I'll want them to guard some apparatus I'm going to set up. I'll pick you up with the rest at Grand Central Station about two. We'll divide them and attack both ends at once. Be sure each party carries an acetylene cutting-torch for we may find the way barred. Get old-timers who are accustomed to underground work if you can. I'm going out to Columbia now and make that piece of apparatus I'm going to leave in the park."

PRECISELY at midnight the vitriolene-armored car drew up in the northwest corner of Central Park. From a group of waiting men a figure detached itself and approached.

"Dr. Bird?" he asked.

"Right!"

"I have a detail of ten men here who were to report to you."

"Good enough. Have them spread out and form a cordon about us so that we can't be disturbed or spied upon."

With the assistance of Lloyd, Dr. Bird unloaded his apparatus and set it up. He secured power by tapping the street-lighting circuit the map had shown him, which he located easily enough by means of a portable induction meter. The device consisted of a large transformer coil and several tubes which glowed as power was sent through them. In the center of an elliptical reflector was set a ray generator. The reflector was set to throw the generated ray toward the ground.

"You understand the use of this, Lloyd?" asked the doctor as the installation was finished and a steady hum came from the apparatus.

"All I know is that it is a generator of a heterogeneous interfering wave of incredibly short wavelength, Doctor, which will spread out and blanket the ground for a wide distance around. I can keep it going at your adjustment, but I don't know its use."

"You don't need to, although I'll explain it when I have more time. It is a device I borrowed from the arsenal of the enemy. You have plenty of guards and this device *must not be interfered with.* Keep it functioning at all costs until Mr. Carnes or I relieve you. Do you understand?"

"Thoroughly, Doctor."

"All right then, I'll leave you in charge."

He entered the waiting car and was whirled away to the Grand Central Station where Carnes waited with a detail of secret service men and plainclotheamen of the New York police department.

"Is everything ready, Carnes?" he asked as he climbed out of the car.

"All ready, Doctor. I have four men who are used to underground work including two who have been on the force over thirty years. Both of them claim to know the location of the tunnel we are seeking and can lead us to either end of it."

"Good enough! Has every man a billy?"

"Yes, and a gun."

"The billy is more important. Now, if the detail is divided, we'll start. I'll take charge of one and you, Carnes, will command the other."

They entered waiting cars and were driven uptown along Eighth Avenue. At 104th Street the party under the command of Carnes turned to the west, but Dr. Bird's party kept on to 110th Street where they turned east along the Parkway to the subway station. Here they left their cars and went underground.

"I may have a little trouble locating that tunnel, Doctor," said the guide. "I haven't seen it for a good many years."

"Take your time, Coles," replied the doctor. "We aren't due to make an attack for another half hour. Carnes' men must find their station."

The detective led the way along the subway for a few hundred yards and paused before a manhole. By the light of their torches, the detail removed the cover and Coles led the way down into another tunnel underlying the subway. Sloshing along ankle-deep through filth accumulated in the disused sewer, they picked their way for fifty yards. Another small tunnel opened into the one they were in. Coles dropped on all fours and crawled into it, the rest of the party following. Gradually the tunnel grew larger until they were able to stand upright.

"The end of the tunnel you're seeking should be about a hundred and fifty yards further along on our left, Doctor," said Coles.

At the point he had prophesied, a narrow tunnel opened in the wall. He turned into it but after twenty yards stopped with an exclamation of surprise. The way was blocked by a heavy steel door.

"That's it!" cried Dr. Bird in an undertone.

He glanced at his watch and saw that it was five minutes of the time set for the joint attack. He ran his flashlight over the door. There was no handle on the side he faced, but a keyhole indicated the location of the bolt holding it closed.

"Bring the torch," he said.

Two of the men brought forward an acetylene cutting torch which, with two small cylinders of compressed gas, had been dragged along with great effort. His watch showed that the hour had arrived.

"Cut through that door," he ordered. "When we enter, have your billys in your hands. Take them alive if you can, but get them in any case. Above all, *don't let them wreck any machinery they may have in here,*"

There was a weird glow and a hiss as the oxy-acetylene torch began to eat its way through the steel door. From behind it came a sudden murmur of sound which became recognizable as a babble of shouts as the torch opened a hole through the door. Blows fell on the opposite side, but the torch relentlessly ate its way through the metal.

"Now shove!" cried the cutter.

The men threw their weight against the door and it gave. A hook in the hands of a detective caught it and swung it open. The lair of Saranoff lay open before them.

The Closing of a Switch

THEY looked into an ancient tunnel, originally cut for an aqueduct, but never used. A few feet ahead of them it opened out into a cavern twenty feet wide and eight feet high. In the center of the cavern stood a piece of apparatus from which extended a projector tube. The walls of the cavern were lined with sheets of dull grey metal and screen of the same material stood around, ready for use. On one wall of the cavern was a panel on which were mounted a dozen switches. From the panel a heavy cable led to the projector in the center of the room.

All this was evident at a glance to Dr. Bird's scientifically-trained eye, but the attention of his men was with the half dozen grotesque figures facing them. They were attired in a sort of medieval armor with helmets like those of a diver. Heavy gauntleted gloves covered their hands which held revolvers menacing the attackers. They were grouped around the projector from which came an eerie violet glow, visible even in the brilliantly-lighted cavern. Behind them was a second steel door from which came a shower of sparks as Carnes' cutting torch ate its way through it.

As Dr. Bird came into view, the nearest figure raised his pistol and took deliberate aim. There was a click behind the doctor and an oath. The armored figure pressed the trigger of his weapon and the hammer of his revolver fell. Instead of the ear-splitting crash and spurt of orange flame which was expected, there came a metallic click. The weapon had failed to fire.

With a shout Dr. Bird charged. Six revolvers covered him and clicked futilely. Dr. Bird caught the leader about the middle and hurled him with a crash to the ground. The others leaped to his assistance, casting aside their useless firearms as they did so.

The armored men retreated before the rush. One of them ran lumberingly toward the switchboard. Two detectives sped in pursuit, but they were too far away. His hand closed on the switch he sought but there came an interruption. Another of the armored figures leaped into the fray and grappled with him. The two figures wrestled grotesquely. Suddenly the second one was thrown aside and the leader reached again for the switch. The sec-

ond figure attacked again and a knife gleamed in the air. It was buried in the body of the attacker from behind where the armor ceased and he fell with a choking gasp. In an instant the first man's hand closed on the switch and closed it. Nothing happened

There was a sudden shout as the second door gave and Carnes' men burst into the cavern and took Saranoff's men in the rear. A shouted order came from their leader. The four men still on their feet ran slowly toward the oncoming men under the command of Carnes. The two parties were almost at grips when the men in armor disappeared. A hole yawned in the floor into which they had leaped.

"After them!" cried Carnes.

His men peered down the hole but it was dark. As they looked there came a metallic clang and a steel plate closed it.

"Bring the torch!" bellowed Carnes.

"No use, old dear," came Dr. Bird's voice. "Before you could cut through that steel they would have stripped off their lead armor and be far away. We have two of them at any rate. Some of you take care of this fellow I'm holding down."

Three men gripped the figure from which Dr. Bird stripped off the helmet. A bearded fierce-eyed man was revealed.

"Not the man I hoped for," said the doctor in a disappointed voice. "Well, we'll make him talk later."

He rose and bent over the apparatus from which violet rays were still streaming. In a few moments he had mastered its inmost secrets.

"LORD, but it's simple!" he exclaimed. "The disintegration impulses of radium are transformed into waves and sent directionally into the ether at such an amplitude that when they strike the correct substance, in this case gold, they are interrupted and start the metal to disintegrating. The radium loses its radioactivity in the process and is transmuted into lead at an accelerated rate. It will be absurdly simple to reverse the process enough to make the gold stable again. Here, men, take up this device very carefully. It is worth a fortune."

As four men bent over the device they were interrupted by a cry from Carnes. The detective had stripped off the helmet from the stabbed figure and was gazing at the face revealed. With a corner of a handkerchief, he had rubbed at the swarthy cheek. On the handkerchief appeared a brown stain.

"It's Thelma, Doctor!" he cried.

With a cry of horror Dr. Bird rushed to his side. There was no doubt that Carnes' observation was correct. She was disguised so well that he would have passed her a dozen times without recognizing her; but Carnes' eye, well accustomed to disguise, had penetrated. The doctor hastily stripped off the lead armor and turned her over. Blood was flowing from a long gash in her back. With trained fingers, Dr. Bird explored the wound. The knife had struck her shoulder blade and been deflected, making a nasty but not dangerous wound. The girl had fainted from shock.

"Thank God!" cried the doctor as he caught her in his arms. "Thank God, she isn't hurt. Give me something to stop this bleeding."

He shifted her weight to his left arm and grasped a proffered handkerchief. As he pressed it to the wound, her eyes flickered and then opened. She cast a frightened glance around.

"The switch!" she cried. "Stop him! He mustn't close the switch!"

"Steady, Thelma!" came Dr. Bird's calm voice.

She ceased her struggles and looked up into his eyes. A happy sigh came from her lips and she relaxed.

"Did you capture it, Doctor?" she murmured.

"What? Oh, the disintegrator? Yes, I have it all right. Don't you worry, Thelma, you aren't hurt badly. Why on earth did you tackle that man and get stabbed for? He might have killed you."

"I tried to keep him from closing the switch," she murmured. "It was connected with a cache of dynamite and would have blown the whole cavern up if he had closed it. I was afraid you would be killed, dear."

At the involuntary word of endearment, a curious change came over Dr. Bird's face. The anxiety and tenderness faded out of it and in their place came a stern and cold expression. He carefully laid the girl on the ground.

"Miss Andrews," he said coldly, "I have told you repeatedly that I desired no expression of feelings from my subordinates. In our work, sentiment is outlawed. You allowed your feeling to run away with you just now and risked a life which is quite valuable to me in my work in order to prevent the closing of a switch. Had you used your alleged brains, you would have known that I would have foreseen such a contingency and provided against it, especially as you recently aided me in perfecting the device with which Ivan Saranoff protected his solar magnet when I raided it before. In future, kindly think before you act rashly and credit me with a small modicum of brains and forethought."

As the doctor's harsh words struck her ear, the happy expression faded from Thelma's face and was replaced by a perfectly impersonal gaze. However, a close observer could have detected a suspicion of a twinkle in her eyes and the faintest possible softening of the corners of her mouth.

"Yes, Doctor," she said meekly.

THE END

.... Help put over the "More Science Fiction Movies" movement by sending in your petition blank. See Page 1382 ....

THE MOON MISTRESS

By Raymond Gallun

(Illustration by Paul)

They fairly swarmed over us. So thoroughly did they cover us that for a time I could see practically nothing. After a time they subsided.

THE MOON MISTRESS

by the author of "The Revolt of the Star-Men," "Waves of Compulsion," etc.

FOR my own part I felt as if I had suddenly discovered a sharp sword suspended above me by a thread. I half believed that entering this forbidden precinct of *La Terre Rouge* aroused similar feelings even in old Parks, who was a veteran tramp of the lunar globe.

The room was fairly large. From our position beside its low-arched entrance we could get an excellent view of it. Scattered about the multi-colored stone flagging of its oval floor were low tables, and about each richly carved and upholstered couches were set. Almost every couch had an occupant—some a man and some a woman.

Both sexes were represented in about equal numbers. The patrons sucked smoke from long, thin-stemmed pipes while, with languid, listless movements, as though they lingered on the borderline of dreamland, they played with tetrahedron-formed dice. The several lamps which hung from the barbarically-tooled ceiling cast their subdued light down through a reek of muddy, greenish vapor. The odor sickened me with its overpowering sweetness, and yet it caused tiny bells of pleasure to tinkle inside my head. From far above, through a narrow slit of a window, a small segment of the green earth was visible against the black sky.

But these impressions were not of prime importance to us now. Anxiously we scanned each of the half-drugged occupants of the room, searching for one whom we felt certain should be somewhere within this notorious dive of the moon's great radium city.

"He is not here," Parks told me quietly after several moments.

I glanced at him. His face was as calm and impassive as ever. It was a hard, square face, seamed by countless deep wrinkles that were in marked contrast with the coal-blackness of his close-cropped hair, that started low down on his forehead. A livid mottled scar covered almost his entire left cheek. A leak in a space suit somewhere out on the lunar plains had caused that, I had guessed.

His dingy grey suit, wrinkled and unpressed, bulged sloppily from his squat bear-like body. Queer, rough, old intellectual Parks was talkative and laconic by turns. In the two days that I had known him, I had found some slight reason to doubt the honesty of his motives, and yet I had already come to like him.

I was painfully conscious that the suspicious Oriental eyes of several of the patrons were on us. But it was easy to see that those worthies were too far gone with drugs to pay much real attention to us.

"We've got to find the kid!" I whispered with hoarse emphasis. "It isn't only his neck. It's the secret that they lured him here to get . . . the mine . . . radium . . ."

Parks waved a horny hand toward me in a silencing gesture. "I know all that better than you do," he said. "And we'll find him if we can."

A thin-limbed attendant clad in a loin cloth and turban approached us and asked with stiff politeness if the Sahibs desired pipes. His speech betrayed his Indian ancestry.

"We have important business now," Parks told him. "Here is one who seeks admittance to the cult of Mu-Lo. We would see the Master."

My companion handed the Indian the tiny golden figure of a repulsive insect-like creature, which had been the pass that had admitted us to this inner chamber where few were permitted to enter. The man took it and scrutinised it closely, searching for the minute mark which verified its authenticity. Satisfied, he returned it, and motioned us to a divan along the wall. Without a word he circled around to the other side of the room and entered a curtained doorway.

Having seated myself on the soft cushions, I undertook the difficult task of straightening out one of the most involved puzzles which I had ever encountered. A short time before, Russell Joywater, an old friend of mine, had died at Cleveland back on Earth. His sole heir was his son Jack, who had not yet reached his majority. I was placed in charge of the small estate.

During the last few months of his life, Joywater had done considerable exploring in the little known region of the moon which lies far to the southeast of the lunar colonial city of Tycho, and on that hemisphere which is invisible from the earth. Joywater's death came suddenly after his return to his native planet. There was a hint

RAYMOND GALLUN

THIS story follows the successful "Revolt of the Star Men" and "Waves of Compulsion" of our author. He turns his attention now to the desolate, mysterious, adventure-filled moon. We do not see the moon here as a place for men of science to explore, to fight with brutal nature in order to extract from her mysterious craters new knowledge. We see the moon as a place that man might make habitable, and that he might turn to the devious uses of the human mind.

The peculiar conditions of the moon lend themselves to many purposes. Upon its surface "The Moon Mistress" provokes a series of events—bizarre, cruel, almost fantastic; but portrayed by Gallun as realities of tomorrow.

of foul play.

Among his personal effects was found a hastily-sketched map showing the position of a vast deposit of radium. There were also several samples of the ore, and no more than a hasty test was necessary to show that it was of unprecedented richness. To modern civilization radium is almost life, for it is the catalytic agent which makes atomic energy possible. At the time of which I write, there was only enough radium available to keep in service five space ships of the safe modern type.

NO legal action had been taken to claim the mine. And with the limited data we had, we could not claim it. Lunar law demands that a careful survey be made of the site, and photographs be taken. Neither of these requirements had been fulfilled. In consequence, it was necessary for Jack Joywater and me to come to the moon. Since we had never before ventured into the lunar wilderness, we had enlisted the services of Fred Parks, an archaeologist who had known Russell Joywater. From youth, ever since the early days of lunar colonization, Parks had wandered over the empty, airless plains, searching for evidence that the moon had once been peopled by thinking beings.

When we arrived at Tycho, young Joywater, quite naturally I suppose, had immediately wandered off by himself in search of excitement. On those rare occasions when he did return to our hotel he was evasive and noncommittal in answering my questions as to what he had been doing. He spent several hours studying his father's map and taking notes. I thought little of his actions. Tolerantly I remembered that I had once been nineteen myself. But when, a short while before the time set for departure for the mine, he had told me he was going on another tour in the Oriental quarter of the city, I had warned him emphatically that he must be back two hours before six o'clock lunar time.

He was half an hour late when Parks came to my rooms. He had received a phone call from someone whose name he would not give me. Jack was at *La Terre Rouge*—had been there often during the four days, earth time, that we had been on the moon.

I could see no cause for alarm in this information, but Parks quickly assured me that there was danger—great danger. While our monocar had carried us toward the notorious dive he had talked to me.

"You do not know the moon as I know it, Grey," he said. "You have been here only three times, and then you always remained beneath the air-tight domes of the cities. I arrived in the third rocket following the one Johan Saunders piloted—the immortal Saunders who shot himself into the void, knowing certainly that he could never return, knowing also that five hours after reaching his destination his oxygen supply would be gone and he would perish.

"He bargained his life for the thrill of the unknown and for the sake of giving his newly-acquired knowledge to the world. I, too, came in search of knowledge, but there were many more who came for other reasons. Some were voluntary exiles, radicals, psychopathic dreamers and other misfits who sought to build on the moon a home better suited to their peculiar temperaments. Then, too, there was a steady moonward migration from the overcrowded Orient. The Tata family of India, which for centuries has worked mines there, set itself to building rockets.

"Whatever mixed faults the immigrants may have had, certainly they all possessed the virtue of courage. They had to be courageous to trust themselves to the crude space vessels of those days. One out of three exploded en route.

"Among such an assemblage of colonists, it is natural that secret societies should be formed. Most of these have now been suppressed, but today there is one strong enough to defy even the government. Its rulers love wealth, and they have ways of getting it." There had been a crooked, suggestive smile on Parks' weather-beaten countenance.

And now, as I sat beside the old lunar veteran in this inner chamber of *La Terre Rouge*, I felt that I had reason to suspect him of duplicity. Where had he obtained the insectiform amulet, which was certainly a badge of membership to the cult of Mu-Lo? Did he belong to the same organization which he claimed was trying to steal the radium mine from Jack Joywater, perhaps had already taken his life? Another thought came to me. Perhaps Parks was luring me into the clutches of his superiors. I knew about the mine; it was best to have me out of the way too! A panicky feeling started to grow in the center of my chest. But certainly Parks was not a crook; he had been too well recommended.

The big burly man leaned toward me and whispered softly: "I'm afraid that things are going to move pretty fast around here in about a minute, Grey. That Hindoo will be back pretty soon. So be on your toes and keep that pistol cocked; and above all stick close to me. We'll find the boy if he's here, and if he isn't we'll find out where he is!"

"There's one thing I want to ask you, Parks," I said. "Just what is the cult of Mu-Lo?"

Parks turned toward me with a quick jerk of his head. A slow smile spread across his face. "You don't have to know that now," he replied cryptically.

A clash of weird music caused me to look toward the opposite end of the hall, where there was a broad platform or stage. A woman, wearing an exotic costume consisting mostly of jewels and a filmy veil, had mounted the platform. Her supple body was bending and swaying majestically to the slow rhythm of the music. As she danced, she caused the veil to flow and eddy about her like a living thing made of a diaphanous mist. There was no denying that she was beautiful—gorgeous would perhaps describe her better. But about her finely-chiseled features, her smooth black hair, and her great dark eyes there was more than a hint of the seductive siren. She glanced imperiously about, over her subjects at the tables. One sensed that they were her subjects. Those who were still conscious enough to do so, raised their right hands, palms toward her in salute.

HER eyes fell upon us at the back of the room, and then she smiled a slow, and it seemed to me, triumphant smile at Parks. He met her gaze with a cold unseeing stare.

Her dance seemed like a religious ceremonial. She had begun to chant liltingly, her rich voice pouring out strange unearthly words and phrases in caressing, questioning, questing notes:

"Maieu seweeah? Haieu! Haieu! . . ."

The Hindoo servant returned, circled softly around the room to where we were. "The Master awaits you. Come," was all he said.

As the slave led the way to the curtained door, I looked again toward the queenly woman on the stage. There was one thing about her costume which I would have liked to scrutinize more closely. She wore a thin band of silver about her head to hold her hair in place. Set in the forward portion of this band was something which sent back to me baleful flashes of frosty light. Was it—could it be a real jewel of that size? The Queen gave me a taunting smile.

We entered a dim-lit passageway. The Indian was in the lead, and Parks took pains to hover close behind him. I brought up the rear. My hand was in my pocket, clutching the butt of my electronic pistol for, whatever Parks' motives, I meant to aid him in what he did.

We proceeded for some considerable distance along the narrow corridor, and down several flights of stairs, coming at last to a hall where the small illuminating bulbs were fewer and farther between.

It was here that Parks acted. He clapped a silencing palm over the mouth of the Indian and hurled him heavily to the stone floor. I hovered close to give aid, but it was not needed. The frail Oriental seemed as incapable of resistance as a bundle of rags, in the hands of his bear-like assailant. Parks was sixty, but if his age had detracted any from his physical prowess, it was not noticeable.

We used our handkerchiefs to gag the servant, and we trussed up his hands and feet securely with a piece of rope Parks had brought along for just such an emergency. We left the man in a small storeroom at the side of the passage.

A little farther on, my companion located a stairway. We descended. Parks flashed his electronic pistol against a certain spot in one wall. A shower of incandescent sparks shot out soundlessly. Peering into the blackened hole, I saw a switchboard which had been hidden behind a concealed panel. Cautiously Parks thrust his hand into the hole, groped about questioningly, and then unscrewed three fuse-plugs. He thrust them into a pocket.

"Now," he said, "we are ready to meet the Mekal."

Some moments later we entered the luxuriously appointed apartment of the mysterious man of power. He sat before a desk, engaged in scanning some documents. At our entrance he looked up. Immediately he became tauntingly cordial.

"Greetings, my friends," he breathed wheezily. He was a dark, fat man with oily skin and hair. I noticed that one of his pudgy hands rested on a small shiny lever.

We ignored his gesture which invited us to be seated in the chairs which stood before his desk.

Parks came abruptly to the point. His voice was hard as flint. "What have you done with Jack Joywater?" he inquired levelly.

"Jack Joywater?" The Master shook his head innocently. "I have not been honored with the acquaintance of the person you mention."

Parks' hand crept slowly into his pocket. "No? That is most strange—most strange indeed, my friend," he said mockingly. Gradually he was withdrawing his hand from the pocket.

The Mekal's eyes caught the gleam of the heavy weapon the gnarled fingers held. His own fat hand forced down the lever at his side and—nothing happened!

I had noticed the network of copper cables that criss-crossed the ceiling above our heads, and the broad metal plate under our feet. Now I understand why my companion had removed the fuse plugs.

Parks' weapon was on a level with the Master's breast. "Now perhaps you will consent to talk business with us, O Great One," he purred, still using the stiff speech which I later learned was characteristic of the devotees of Mu-Lo. "Again, what have you done with Jack Joywater?"

The Mekal's face was chalky and yet, now that he was cornered, he managed to muster up a rat-like courage. He tried to reach for an alarm button, but Parks checked him.

"Place your arms straight out on the desk before you and answer my question," Parks advised. "Lock the door, Grey."

The Mekal was leering defiantly at my companion through his pallor. "You think you have won, O devotee of the Queen!" he laughed in sardonic scorn. "You imagine that you have beaten me, that you can steal the mine from Joywater and place it at the Queen's feet! Faugh! Know then that hours ago I despatched the youth whom the Queen so artfully bewitched, may Mu-Lo bless her, and a number of my trusted henchmen, to find the mine and survey it. When they return with their data the mine shall be registered in my name. Thus Mu-Lo punishes the wicked."

Parks' grin was almost benign. "Right, Great One. I have appointed myself the instrument of Mu-Lo's wrath. You shall accompany us on our journey. We go immediately. And remember, I shall keep my pistols always trained on you from within my coat."

CHAPTER II

Across the Moon

WITH the Mekal leading and Parks following him closely like a malignant shadow, we made our way through deserted corridors to a small doorway opening into a street.

Here Parks paused and leaned toward me, still keeping his eyes fixed watchfully on the treacherous Mekal. He seemed tired, almost haggard in the wan light of the small bulb above us.

"I know I'm in the red with you after the accusations this fellow made," he told me in a low voice. "But trust me. I'm doing all I can for you and the boy."

A monocar carried us through the whirling, flickering bustle of the great lunar city. As the tiny vehicle shot along on its narrow rail, which hung webbily many feet above ground, rows of huge ghostly buildings swept past us. They soared up and up grandly until their shadowy pinnacles seemed almost to touch the colossal radial ribs of the huge quartz dome that roofed the lunar crater of Tycho. It was this dome that sealed in the atmosphere and made life possible on the lifeless moon. Through the thick glass, the icy pin-points of fire that were the stars shone in the velvety blackness of the airless sky.

We came at last to a station at the summit of Tycho's encircling ring of mountains on which the dome rested. Here, in a locker room, we donned our space armor. In

another monocar we shot down the outer slope of the mountains to the rayed plain below.

The upper fringe of the rising sun's corona, grey-white like a ghost's veil, was just stabbing up over the horizon when we reached the shed that housed the tractor-like vehicle which was to carry us to the mine. The dim light glinted on the faint frost of congealed carbon dioxide that covered the chalky ground. The cold was intense and numbing, biting even through our heavily-insulated clothing.

And so we started out, creeping along under the weak power of our small atomic motor. We could not wait for the rays of the sun to impinge upon the huge, sail-like energy collectors which rose above us. Our course was toward the southeast and the unknown.

The tiny cabin, closely packed with intricate machinery, had the aspect of an ancient submarine's interior. There was no luxury here. For many days if all went well, these cramped quarters would be our only home.

For safety's sake we still wore our space armor. The short-range radios in our helmets enabled us to talk with one another.

Parks sat before the levers that steered and controlled the clumsy monster. His sober gaze darted watchfully along the serrated horizon where the grey landscape met the black, star-flecked sky.

"You understand that we are staking our lives on this venture, Grey," he said quietly.

I nodded. "The boy would have done the same for me," I told him.

Parks bit his lip. "It isn't alone the boy and the mine that we're fighting for, Grey. Think of what would happen if our friend the Mekal got control of that enormous deposit of radium. Every space ship owner, almost every manufacturer, would be at his beck and call. There would scarcely be a decent corner left in the solar system."

The Mekal was wired to a metal buttress behind us. His taunting words came to us through the earphones in our own helmets:

"You act your part well, slave of the Queen," he growled. Turning I saw his vengeful sneer through the crystalline globe that covered his head.

"Man," he continued, addressing me, "why do you not turn upon this treacherous one who imposes so outrageously upon your credulity?"

I managed to give him a tolerant, amused smile that sent him back to sullen silence.

Parks was quick to see that some kind of an explanation was necessary. "I can't offer any proof now that I'm playing fair, Grey. I can only ask that you wait and let me prove it. Yes, as you can certainly guess, I have had business with the Mekal and the lady who danced at *La Terre Rouge*. However, maybe that business was for their good and maybe it wasn't," he added suggestively.

"What is the cult of Mu-Lo?" I demanded. We had altered the wavelength of our radios so that the Mekal could not hear what we were saying.

Parks shrugged his heavy shoulders. "Secret organization with plenty of power. It's based on dope—a strange lunar dope that you smoke. A few doses of it and you become its slave. Since the Mekal and his gang have complete control of the supply, an addict is automatically and completely their slave."

"I see," I muttered. "And Mu-Lo?"

"Some kind of deity. The organization needs a figurehead. But even most of the members of the ring don't know just what Mu-Lo is."

I was satisfied. I had seen to it that Parks was well recommended before I had engaged his services. That was all a man who knew little or nothing of the moon could do.

I HAD noted that our course was somewhat more eastward than the course indicated on Joywater's crude map. I questioned Parks about it.

"Short cut," he told me. "Joywater didn't go straight toward the mine as we are doing. His course was a wavering arc. The men the Mekal sent will follow Jack's notes implicitly to avoid the rough territory which we are certain to hit. That gives a chance to beat them to the mine. It's a pretty dangerous chance, but it's the only one we've got.

"And we'll have to keep our eyes open. The Mekal's friends are sure to follow us," he added. "They have the finest espionage system on either the earth or the moon. We're fairly safe now while we are still in this well-explored area so close to Tycho; but when we get into the rough country . . ." He shrugged suggestively.

Hours of tense monotony followed. The tardy sun, hastened a little in its slow rising by our eastward motion, swung on a low arc along the rim of the infernal landscape. Fourteen terrestrial days would pass before the old luminary, blazing with a dazzling brilliance totally unknown on earth, would set. Its rays were playing on the broad metal plates of the energy collectors, causing them to send a strong electric current through our powerful driving motors. To me our rate of progress seemed remarkably rapid for so heavy a vehicle, and over such rough ground. Our swaying, rocking, bumping motion, coupled with the constant whir of machinery sickened me. Mile after mile of wild and scarred ground jolted by; little craters seemingly filled with ink; steep ridges casting serrated shadows black as the waters of the Styx.

Here and there, in the hollows, were dry clusters of small lichen-like plants—the only living vestiges of an ancient lunar vegetation. High up in the ebony sky the incandescent train of an outgoing space liner traced its way. The earth too was there, about half illuminated.

Anxiously, and with aching eyes, I scanned the bizarre scenery through the cabin windows. We had made many miles of progress and the way was growing increasingly difficult. Presently, in a depression perhaps three hundred yards away, something metallic glistened for an instant and then unaccountably vanished.

I called Parks' attention to it. For a long time he had sat in the pilot's chair, steering the clumsy caterpillar with the careless ease of long experience. The while preoccupied and taciturn, he toyed with mathematical formulæ which he scrawled on a calculating pad. He nodded knowingly and returned to his work.

Perhaps three-quarters of an hour later, when we were topping a rise, I caught a glimpse of a strange creature that darted hurriedly from one shadow to another. It was about the size of a man, and like a man it carried it-

self in an erect position. The segmented armor of glistening black that covered it from head to foot, however, gave it the aspect of a monstrous insect!

Parks saw the thing too. "Our real troubles begin now, Grey," he told me with cool steadiness. "But we also have teeth." He gestured meaningly toward the mechanism of the big electronic gun which was mounted on the roof of the cabin.

"But insects!" I cried. "Are we to be matched against huge bugs?"

Little crow's feet showed at the corners of Parks' eyes as he grinned sardonically. The brief cryptic word, "Perhaps," was truly characteristic of him when there was important business at hand.

I stared wonderingly as a small globular thing that originated from some concealing nook to the right of our caterpillar described a slow arc, as things have a habit of doing on the moon where gravity is so slight. It floated toward us and landed only a few yards ahead of the nose of our vehicle. Our view was suddenly obstructed as a shower of rock fragments, mingled with a mass of thick brownish smoke, poured over the cabin. Even though there was practically no air to transmit sound, the concussion was terrific, vibrating up through the treads of the caterpillar. Quick work on the part of Parks, a sharp turn to the left, was all that saved us from tumbling into the hole the atomic grenade had blasted in our path.

At once a sharp command came to us over the radio: "Parks—Grey—surrender. Parks—Grey—Surrender." The command, given in harsh metallic tones, was repeated over and over again, the while the hellish inferno of bursting grenades continued all about us. But we chose to ignore it. To surrender now could mean nothing but the sudden demise of all our hopes, and possibly our own physical demise as well. And so, jolted and shaken by the hail of explosions, the caterpillar, zigzagging this way and that, continued valiantly on its way.

The Mekal, still firmly bound, sneered at us viciously. "This is the end for you, Parks and Grey," he hissed. "My creatures will avenge the capture of their master."

HIS words gave me an idea. Deserting my post beside the sights of the electronic gun, I stepped over to the radio transmitter beside Parks and connected the microphone within my helmet to the set. I was now ready to broadcast to the enemy.*

Without consulting Parks I spoke into the transmitter: "Cease firing; let us alone or we shall kill your Mekal!"

A long moment followed, punctuated only by a few intermittent grenades. Then the answer: "Kill him if you will, but remember: thus will you make the manner of your death the more terrible!" Immediately the tooth-cracking vibration of explosions was resumed.

"Won't work, Grey," Parks shouted.

It seemed evident that, because the Mekal was our captive, our enemies were not hurling their missiles directly at us for fear of killing him too. They only sought to stop us.

I was back at the firing mechanism of the electronic gun peering into the eyepiece of its telescope sights. I set in motion the machinery that turned the gun on its swivel. As it rotated, each section of the surrounding country in range was visible to me through the lenses.

Our pace, hindered as we now were, was slow—barely as fast as a man could run on earth. And then they came, those creatures of the Mekal. They popped up from various points of cover about us, and darting this way and that, they rushed toward us. Each brandished a small electronic pistol. Insects, huge insects, resembling the tiny Ledi, which are the only living creatures native to the moon! The sight of them astounded me, and yet it did not spoil my aim. One disappeared in a spurt of sparks from my weapon, another and another. I sent the gun swinging this way and that, seeking victims.

The minions of the Mekal were close now, and I saw that they were not insects but men—men who peered through strange slant-eyed goggles with which their fantastic space suits were fitted. It was evident that the resemblance of their queer costumes to the Ledi was intentional and not accidental.

What was the reason for this outlandish kind of horseplay? I had no time to ponder the question, for the task of defending the caterpillar completely occupied me. And it looked as though I was going to fail. I had accounted for half a dozen of the scattered attackers, but the others had come so close now that they were out of range of my weapon. They were directing flaming blasts from their pistols at the treads and undercarriage of our vehicle.

The heavy insulating material that coated all external parts of the machine would resist the electronic streams for maybe a minute; then the undercarriage would melt away and we would be wrecked. Our foes feared to puncture the airtight cabin for they did not know that we all wore space armor; they had no desire to cause the death of their Mekal by exposing him unprotected to the vacuum of the void.

Parks had urged the caterpillar to its topmost speed. Ahead of us, yet still a considerable distance away, was a range of jagged hills through which led a steep pass. If we could reach that pass there was hope, but our chances of doing so were slight. Already the driving mechanism beneath us was beginning to creak and strain. It would have been completely suicidal for us to open the door and attack the Mekal's men with hand weapons.

A broad patch of white ground stretched before us. It gleamed deceptively solid in the fierce light of the sun. Yet it was not solid. Even I, having no previous first-hand experience with the wildernesses of the moon, knew that. It was quicksand, powdery and bottomless—the quicksand so common in this region we were now traversing that it had previously kept explorers away. To be caught in its yielding clutch meant death.

But now it was our salvation. Parks moved a lever, and broad plates of metal extended themselves out from the treads of the caterpillar. This recent invention quadrupled the surface over which the weight of the huge vehicle was distributed.

As safely as a man treading over deep snow with snowshoes, we glided out over the area of white sand. The Mekal's men could not follow. I managed to pot two of them before they were able to find cover.

And so we reached the protection of the pass. Just be-

*The miniature sets with which our space suits were equipped were purposely of very weak power to insure the secrecy of our conversations. The impulses they produced could not be picked up at a range greater than a few yards. Messages coming from the outside were caught by our vehicle's radio and rebroadcast to the small receivers in our helmets.

fore we rounded a bend in the steep-walled ravine, I looked back. In long bounding leaps our pursuers were circling the quicksand. Farther back was their caterpillar moving at top speed in our direction. It was much larger than the machine we had. The chances of our being eventually captured looked excellent.

Another unexpected turn of fortune played into our hands, and though its value was doubtful it bolstered up my hopes considerably. The gorge we were traversing branched into two separate passages. The floors of each were as smooth and hard as flint. There would be no spoor. We chose the one to our right.

For many minutes we made our way along it, watching anxiously for any evidence that we had been discovered. We reached a broad, mountain-bordered plain safely and still there were no favorable developments.

CHAPTER III

Lunar Strategy

HOURS of slow progress followed. Frequently we had to blast our way through rocky obstructions with our electronic gun. Hastily we ate sketchy meals of concentrated food. Twice I relieved Parks at the controls for he was badly in need of sleep.

There was little danger of our being lost, for the region had been fairly well mapped from space fliers even though it was impossible for them to land here.

On several occasions minor breakdowns delayed us. However, repairs were always possible.

I wondered about many things. How far had the Mekal's expedition progressed? It was not unlikely that they had already reached the mine. I chafed at every moment of delay. What of Jack Joywater? And still I could not quite straighten out the connection between Mu-Lo and the now uncommunicative Parks.

Occasionally we saw small groups of the Ledi ants of the moon scurrying busily over the ground.

We had passed into that lunar hemisphere which is always invisible from the earth. The mine must be only a short distance farther on. Eagerly we watched for the landmarks drawn on Joywater's map.

We were ascending a steep hillside when the accident which was to prove our undoing occurred. With a sharp jolt one of the drive chains parted. Parks and I clambered out to determine the extent of the damage, leaving the door open. We walked around to the other side of the caterpillar, for there the trouble was located. The examination of the broken chain claimed all our attention. Some moments later I looked up, glancing across the nose of our vehicle to a little plain strewn with many boulders. There I saw three men bounding away from us. Two were clad in the insectiform armor of the Mekal's henchmen, the other was the Mekal himself!

My discovery came too late to be of any help to us. Parks and I both sent blasts of flame from our pistols at the fugitives, but they were already out of range.

A small warning spurt of blue flame, visible to us through the windows, flickered in the interior of the caterpillar's cabin. In a second or so it was followed by a concussion the like of which I have never experienced before or since. It hurled us half-stunned into the dust. When I had regained my senses sufficiently to shake the encumbering debris from me and look about, Parks was already on his feet. Aside from a few severe bruises we were uninjured. The caterpillar, however, was totally out of commission, for the bomb the Mekal's men had left had done its work well. The cabin and the motors were entirely demolished.

With feverish anxiety we took stock of the supplies left to us. There was a small amount of concentrated food and about a gallon of water in a battered cask, but not a single bottle of oxygen. The oxygen in the flasks attached to our helmets could last only half an hour more.

Being stranded on a desert island peopled only by wild beasts, and located hundreds of miles from civilization doubtless would satisfy anyone's yearning for breath-taking adventure. Yet, such a position is nothing in comparison to the one in which we now found ourselves. In all the horrible devil's kingdom about us, there was no air that a man could breathe. I stared around me, over the ash-colored landscape, the tortured rocks and the twisted hills that cast their fang-like black shadows. For untold eons no living thing except the tiny Ledi had trod those hills, and the stars in the inky firmament had not even winked kindly at them. For the first time I became aware of the utter silence, and it seemed to be filled with the faint tinkling of a thousand fairy bells and the piping whisperings of impish, elfin voices. Madness came easily out here.

Parks smiled at me. "I know the moon," he said, "and sometimes she has been kind to me; maybe she will be kind to us now. Who knows?"

We loaded ourselves with what food and water there was. Then Parks led the way in the direction we believed the mine to be. As we loped along, he kept scanning the terrain. Minute after minute labored by, as the needles of the oxygen pressure-gauges slowly dropped toward the zero points that meant death for us.

We had gone a considerable distance before Parks found that for which he was searching—a group of Ledi. There were six of them. The leader, which was perhaps six inches in length, and looked much like an earthly ant except that his abdomen was enormously distended, paused at our approach. His antennæ waved questioningly. Then, leading his comrades, he scurried off. We followed.

I was much puzzled as to what Parks intended to do, and I was not much enlightened when we came to a deep hollow beside the walls of a small crater. The floor of the depression was covered with many transparent hemispheres that looked like huge soap bubbles. Within each of the hemispheres, an odd, greenish-blue vegetation was growing. I knew that we had come upon a city of the Ledi; but how did this figure in with Parks' plans?

Puzzlement became amazement when he selected a can of syrup from our supplies. Opening it he proceeded to smear the sticky, now bubbling stuff all over his armor. At his direction I did likewise. We cached the remainder of our supplies in the sand, and then advanced into the city and threw ourselves down beside the bubbles.

OUR presence was immediately detected. A few of the Ledi ventured questioningly toward us. When their mandibles touched the sugary substance that coated us, they hurried back to tell their comrades of their discovery.

In almost no time every burrow in the colony was pouring forth a stream of eager inhabitants.

They fairly swarmed over us. So thickly did they cover the glazed front of my helmet that for a time I could see practically nothing. However, I did manage to note that many of them carried bits of a thin, transparent substance that looked like cellophane.

In a short while the horde of busy, hurrying creatures subsided somewhat. Barely a foot over our heads as we lay prostrate on the ground, the Ledi had constructed a flattened dome of the light-transmitting material.

From beside me Parks spoke: "You can open the vent in your helmet now, Grey. They have admitted air from the chambers below."

I did as he bade. Though the air had a nauseous, metallic smell, it was breathable.

A few of the lunar ants were still with us, removing the syrup, presumably for storage. Parks was refilling his oxygen bottle by means of a small hand-pump which was part of his equipment.

Somewhere, years before, I had read a book describing the lives and habits of the Ledi. It told how they hibernated during the long lunar nights, in air-tight subterranean lairs, coming out at dawn to collect the crystals of carbon dioxide and water that had formed as frost during the period of darkness and cold. These crystals they carried into the transparent hemispheres which they constructed from a rubbery, gelatinous substance which exuded from their mouths.

With the coming of day, the carbon dioxide volatized again. Under the action of the sunlight, the chlorophyl in the plants converted the carbon dioxide and water into starch and free oxygen. Thus the Ledi obtained both air and food on the dead moon. They were able to store sufficient air in their bodies so that for short periods they could venture out into the open, away from their hemispheres and burrows.

It was the instinct of theirs that compels them to seal up anything that promises to be food, in an air-tight dome to prevent its evaporation into the vacuum of space, that Parks had made use of in saving our lives.

Having filled his oxygen bottle, Parks gave me the pump. When I had finished replenishing mine, Parks carefully slit the taut bubble with his knife, and we crept forth. We knew that it would be necessary for us to return in a short time.

We had not journeyed far when we descried a peculiar pinnacle of red rock caped by a broad flat stone which made it resemble a pedestal. Just such a formation was marked on Joywater's map. The radium mine should be scarcely five miles beyond.

Almost coincident with this discovery we noticed marks of caterpillar treads in the volcanic ash of our trail. The Mekal's men had beaten us to our goal! How long ago they had passed this way we had no means of knowing, for in the wastes of the moon a footprint may remain perfectly fresh for countless ages.

Half madly we hurried forward. What we meant to do I cannot say, for our small oxygen supply would barely have taken us to the mine. Even if we had arrived there, we could have done nothing. I think a kind of panic must have taken possession of us.

A cloud of brown smoke arose from behind an obstructing hill ahead of us. It puffed up and dissipated rapidly, as vapors have a habit of doing in a vacuum. Another followed it. The ground beneath our feet trembled as if shaken by an explosion. Perhaps after all we had caught up with the Mekal's men.

Like twin demons we scrambled and clawed our way to the top of that torn mass of lava, and in the small level plain beyond we saw four caterpillars, or rather two, and the wreckage of two more. Threads of smoke arose from the debris. One of the undamaged vehicles was quite close to us. Its door stood invitingly open, and it seemed to be deserted. About fifty men clad in insectiform space armor, were gathered around the wrecked machines which were some distance away.

I was on the point of mentioning our splendid opportunity to Parks, when a figure crawled from the nearest of the battered caterpillars, darted through a break in the encircling ring of armor-clad men, and made off in our direction. Though he covered ground rapidly, his wavering, staggering gait suggested that he was injured. Those from whom he was evidently trying to escape made only a brief, half-interested attempt to head him off. Not succeeding in this, they returned their attention to the two twisted heaps of junk. They knew that in the empty lunar wastes death would quickly overtake him anyway.

I had raised my head a little too far above the rock behind which we were crouching, and the fugitive saw me. His arms waved wildly as he came straight in our direction.

HE reached us at last and managed to climb over our little rock barrier. Utterly spent he tumbled face downward in the dust beside us. We rolled him over on his back. His eyeballs had turned up in their sockets, so that little but the white showed. His breath was quick and gasping. The reason for his condition was immediately evident. A flying fragment of metal which had hit him probably during the blowing up of the vehicle in which he had rode, had made an unpatchable hole in the armor over his chest. Through the breach, the life vapor in his space suit was slowly leaking. He was dying not only by asphyxia, but because, no longer resisted by normal atmospheric pressure, his vital organs were expanding, literally tearing themselves from their normal positions in his body.

He trembled convulsively as he tried to speak. "The Queen," he gasped, "she does not know where the radium is. She must not know! She followed us, but we got to the mine and surveyed it and took photographs before . . . they destroyed us. They are all dead, I think. The Mekal . . . our Mekal . . . I have the data . . . in my pouch . . . Take it back . . . The Queen must not . . . I . . ."

Death had claimed him. His blankly staring eyes were wide open, seemed to bulge from his head. The whites were shot with the wavering red lines of ruptured capillaries. The hideous look sickened me, and yet it filled me with pity for this poor wretch who had been a loyal slave of the Mekal. In his half-delirious condition, something had caused him to imagine that we were friends.

Now, however, a stronger emotion claimed us. The maps, the photographs were ours! My trembling fingers groped in the man's pouch and drew forth a small metal box. I opened it and thumbed through its contents while Parks watched from over my shoulder. Yes, the papers containing the complete record of the survey were there,

and the pictures already developed. They showed a rugged, mountain-bound valley in one wall of which were many tunnel mouths—the workings, presumably, of an ancient lunar race, dead and gone before the earth was fit to support life.

I grinned at Parks and he grinned back. "Things are beginning to look a trifle simpler now," I remarked. "Shall we try it?" I was gesturing toward the caterpillar which stood deserted in the valley.

"Might as well, Grey," he replied. "However, don't be too hopeful. And remember, don't touch that gun of yours unless I tell you to."

Quickly we crept over the crest of the hill and down the slope. The bulky caterpillar which was our goal was so placed that our enemies were hidden behind it and could not see us. This was fortunate, for the ground was fairly level offering few places where we could hide in case of necessity.

Our scamper to the vehicle was without incident. Cautiously we clambered into the spacious cabin which was many times larger than that of the caterpillar which we had once possessed. Parks stepped to the controls and gave them one quick searching glance.

He nodded ruefully at me. "Locked," he muttered. "We haven't a key and, as it is, we can't budge this thing an inch, much less escape in it."

I happened to look out of the window on the side of the cabin which faced the other vehicles and the minions of the Queen. The men were coming back to their caterpillar; it would be only a matter of a few moments before they would discover us if we remained where we were. If we fled, the result would be the same for we no longer had time to reach the protection of the hills.

Parks had seen too. He leaned close to me and whispered: "We can't run for it now. They allowed a man mortally wounded to get away, but they won't be so kind to us."

"What shall we do?" I asked. "We certainly can't stay here."

"To surrender is our only chance."

"Surrender! You're crazy. I'd rather die than . . ."

"No you wouldn't. Besides, if we're clever, maybe it won't be the end of things for us. Now quick, we've got to get out of here!"

He shoved me through the door. Abruptly his manner changed. Something metallic clinked against the plates at the back of my armor. It was the muzzle of Parks' pistol. "One false gesture on your part," he hissed slowly, "and nothing will ever trouble you anymore. Now march—around the caterpillar!"

"You rotten skunk!" I spat. But he could not hear me for he had already ripped the thin cable that led from the microphone in my helmet to the transmitting apparatus in the case fastened to my belt. However, my receiving equipment was still functioning. Parks had taken my pistol. Anger and amazement over Parks' sudden change of attitude had taken possession of me to such an extent that I scarcely noticed what happened around me in the next few seconds.

I told myself that I should have known better. Parks' vague answers to many of my questions, as well as a number of other things, had long ago aroused my suspicions. Still I had allowed him to lead me on. Fool! But I would bide my time. Maybe there would be a chance for revenge.

CHAPTER IV

Vengeance!

I WAS only vaguely conscious of being seized at Parks' command by many men in insectiform armor. They hustled me to the farther of the caterpillars. First taking the precaution of binding me securely, they carried me along a short passage to a tiny and barbarically furnished room in the huge vehicle's interior. Here, a young woman, still wearing her space armor, sat before a desk of elaborately-wrought metal. I was tossed on the thick carpet of the floor. Those who had carried me departed, leaving the Queen, Parks and me as the sole occupants of the room.

Parks stood respectfully before the desk, while the Mistress of Mu-Lo surveyed him piercingly, suspiciously. She was a beautiful, fascinating woman, the Queen. I had recognized that fact when she had danced, and chanted that weird melody in *La Terre Rouge*. Even now the helmet she wore could not hide the siren-like fascination of her eyes.

"The slave of Mu-Lo will give an account of all his doings since his last visit to our meeting place in Tycho," she said in her rich, sonorous voice.

"Gladly, O Most High Mistress," Parks began. "It is my duty and desire to obey you and to guard you and your interests. Discovering that the inglorious Mekal had stolen the maps which you had obtained from Jack Joywater, and had already despatched an expedition, I laid my plans against him. First I tricked Grey, the wretch here (indicating me), into accompanying me, for I knew that he might be helpful to you. Then I proceeded to the Mekal's sanctum and captured him. In a caterpillar supplied by Grey, I set out to beat the Mekal's men to the mine. I feared to communicate with you concerning my movements and plans, for the Mekal was still powerful; and if he learned about me it might have caused you grave trouble.

"A party was sent out by the Mekal's loyalists to rescue him from me, and you, O Great Mistress, evidently followed that party in your own vehicle.

"By trickery the Mekal escaped me, but I succeeded in reaching the mine shortly after his first expedition did. I fought them, but they captured me . . ."

I had noted the Queen's growing disbelief in Parks' story by the frown that gradually narrowed her eyes. He had tricked me, but he would not trick this woman who had spent most of her life dealing with the worse crooks on the moon. She would silence him in a moment and demand explanations. I sensed it.

And then Parks sprang his coup. He drew the metal box from his pouch. "I escaped with Grey," he continued, "and I took this with me. We may thank our enemies for the excellent way they accomplished an arduous job for us!"

The Queen fairly snatched the case from his hand and opened it. Her act was wolfishly eager. She spread the photographs and papers out on the desk. It was easy to see that Parks had won her over completely. I wished that I might speak to her, tell her that Parks had tricked

me and was doubtless tricking her for his own selfish ends. But with diabolical foresight Parks had put my microphone out of action.

The Queen's eyes, (the only part of her face that was visible), smiled. "You have done well, faithful one," she said. "All the necessary data is here. We can claim the mine immediately. But the time is close for the sacrifice to Mu-Lo. We have three victims to feed to the Sacred Ones, the accursed who was once the Mekal, the man here, and Jack Joywater. All of the others are dead. To the temple built by the Ancients it is not far. We shall proceed there before returning to Tycho. As a reward for your excellent service you shall be admitted to the sacred precinct to view the sacrifice. That is all, Parks."

I was placed in a small compartment in the rear of the vehicle. My space armor had been removed, but I was still firmly bound.

A tiny circular window, the pane of which was frosted, let in only a dim light. Lying beside me on the padded floor was the bound and unconscious form of a man. Though the movements I was now capable of were very limited, by craning my neck painfully I could look at his face. It was youthful, but thin and worn now. The dreadful lunar drug had done that. I was only a little surprised when I recognized the boy as Jack Joywater. A bandaged wound, probably received when the Mekal's vehicle had been wrecked by the Queen's forces, explained his unconsciousness. From time to time he stirred restlessly, but did not regain his senses, nor did I try to arouse him.

Up hill, down hill, over undescribably rough terrain the caterpillar rumbled. I had no idea in which direction we were headed. I only knew that at our destination, whatever that was, we were to be offered as sacrifices to some strange lunar god.

Fiercely I fought my bonds, but they were of tough metal cable and could neither be broken nor loosened. Becoming exhausted, I rested. I thought of Parks and I cursed him; yet I still admitted that there were points in the character of this iron adventurer of the moon that I admired.

I slept. Perhaps many hours later a rough shaking aroused me. A man whom I did not recognize was pointing to a space armor. Another devotee of Mu-Lo was putting a similar suit on the still senseless Joywater.

When I had donned the awkward attire, my jailer led me from the vehicle. The other man was carrying the boy over his shoulder.

THE two caterpillars were drawn up beside the rim of a crater. The towering wall of mountains that ringed it arose majestically before us. My gaze slanted up and up to where, near the summit of the slope, a rectangular structure stood. The fierce sunlight glinted on the quartz crystals in the huge Cyclopean blocks of stone from which it was constructed, and filled the deep cracks between them with dense shadow. There were cylindrical towers peaked with rough conical spires at the four corners of the building. It had the aspect of a fortress. There was something bizarre and incredibly ancient about its crude but mighty lines, and a suggestion that no man had a hand in the raising of its stout walls.

The level plain that spread out at the base of the mountains was fairly covered with the bubble-like creations of the Ledi. Nowhere had I even imagined that such an immense colony existed. Many of the little creatures crowded about our feet. They had an air of expectant waiting, and there was a sinister hint in the way they clicked their fanged jaws.

Our entire party, which numbered some fifty persons, climbed a short distance up the mountainside. Presently we came to a broad, flat area of stone set perpendicular against the slope. One of the men manipulated a secret mechanism, and a crude airlock opened to receive us. We climbed a short stair and proceeded along a broad corridor which led farther and farther into the vitals of the mountain. Areas of self-luminous rock in the walls and ceiling gave a scant illumination to the place.

The walls were lined with barbaric figures of giant insects rudely carved in bas-relief. They resembled the Ledi in form, but they were nearly the size of men. The spears and swords they were armed with, and the tools they plied plainly indicated that the intelligence of the creatures that had cut their history in the living rock was, or had been, on a level with that of human beings.

As we advanced farther and met none of the huge Ledi in the flesh, I became more and more convinced that their kind had been extinct for countless ages.

The world-old passageway terminated in a circular room around the circumference of which were many doors. I was led into one, and found myself in a small cell, the floor of which was covered by a thick layer of dust. After I had removed my space suit at an order, my jailer shackled me to the wall. Jack Joywater and the Mekal, both unable to cause any trouble, were tossed carelessly on the floor, and the heavy stone door was closed and locked. The Mekal had a hideous wound on his chest. He was in a stupor and seemed close to death.

Oddly I felt remarkably calm. I could hear the muffled babble of voices.

Now and then there came a deep throaty note such as a strong wind blowing through a narrow rocky tunnel might make. The air had a peculiar metallic odor—the smell of the Ledi. Somehow this realization made me uneasy; I was beginning to distrust those tiny devilish creatures. It struck me as possible that the air for these caverns was drawn from their burrows.

The period of waiting could not really have been very long. A dozen devotees of Mu-Lo returned, and carried the Mekal, Joywater and me farther into the labyrinth. Our procession emerged at last into a tremendous rough-hewn cavern, the arching roof of which sent back with vaulted ringing, the footfalls of those who bore the sacrifices. As we advanced into the great room, the velvety shadows which were disturbed only by a few patches of self-luminous rock, gleaming weirdly in the walls and ceiling, slipped from about the form of a Gargantuan Ledi constructed of a golden-colored metal.

The image, which crouched against the farther wall, was fully eighty feet high. Its grotesque face, half-hidden by the gloom that enveloped the ceiling, consisted mainly of two enormous, many-faceted eyes, set with clusters of jewels that gleamed and glinted wickedly with a frosty, shifting fire. Hammered gold, encrusted with countless gems covered almost the entire figure—the six thin, multi-jointed limbs, the armored body. The effect was one of incredible richness; and yet the rude workmanship sug-

gested that those who had made the mechanical idol had not attained any great degree of culture. That I was looking upon Mu-Lo, ancient god of the moon, I knew.

The worshippers bore us with slow steps into a long enclosure extending from the feet of the image. It was surrounded and roofed by transparent glass.

Tying two of us to upright metal posts and leaving the third carelessly on the floor they left the enclosure. When they had closed and carefully locked the entrance behind them, the sacrificial ceremony began. The little knot of worshippers, led by the Queen, made eccentric movements with their arms while they mouthed queer sounds and phrases which must have been prayers and incantations.

The Queen was dressed, just as she had been at *La Terre Rouge*—wearing the same misty robe, the same great jewel gleaming so evilly on her forehead. She was dancing the same barbaric dance and singing the same wild, questioning song: *"Haieu seweeah? Haieu! Haieu! . . ."*

I REMEMBER those words. Occasionally she glanced toward me and smiled with taunting witchery. In the wan purple light of the place, beneath the gaze of the horrid Mu-Lo, she seemed literally gorgeous—as though all the forces of darkness had combined to shower their gifts of beauty and charm upon her.

At the conclusion of her dance she stood on tiptoe facing the god. Her right hand was raised up as far as she could reach. In a clear, penetrating voice she questioned the deity: *"Haieu, Mu-Lo?"*

A moment passed. I was dumbfounded when, amid the scrape and jangle of ancient and rusty machinery, the voice of the god boomed forth: *"Haieu, Mu-Lo!"*

Immediately the Queen knelt on the rough pavement and prayed silently. The other worshippers drew forth pipes and proceeded to smoke the sacred drug.

I had been searching for some clue which would give me a hint of the way I was to die, and I was not long in finding one. Inch by inch one of the god's jointed, mechanical arms was dropping toward a lever. When the hand struck that lever, a small gate, which led from a compartment outside the walled enclosure, would open. The disagreeable metallic odor from the hordes of insects hinted to me the kind of horrors that would presently rush in upon us.

I gazed through the glass wall at the group of worshippers crouching on the floor. In a moment I found whom I sought—Parks. He met my angry stare without a glimmer of recognition. Gladly I would have choked him. The drug was beginning to tell on the other white-robed men. Their eyes, set in their pudgy, dissipated countenances, were growing heavy with sleep. I noticed, however, that Parks only played with the poisoned smoke; he did not inhale it.

The claw of Mu-Lo was nearing the fateful lever—a foot to go . . . nine inches . . . eight . . . Some of the worshippers were already sprawled on the floor, the others, with the exception of Parks, were either in a dazed or a semi-dazed condition. The Queen continued to kneel on the floor, absorbed in silent adoration of the abhorrent idol.

There was but an inch now between the claw of Mu-Lo and the lever. The sweat of terror covered my whole body. I envied the Mekal and Joywater their unconsciousness.

And then there came the sputtering flash of an electronic pistol. Amid a shower of white-hot sparks a section of the glass fence beside me vanished, burned to nothing.

Parks was responsible. Carrying his still glowing weapon in his hand, he raced through the hole he had made in the transparent wall, and cut the tough cables that lashed me to the post. Then we both turned our attention to Jack Joywater. Since it was easier under existing circumstances for one man to carry him than two, Parks tossed him easily to his shoulder. Mu-Lo's votaries were in no condition to offer any opposition.

We were scarcely through the opening in the wall when the gate in the pedestal flew open. Like a living flood the horde of bloodthirsty Ledi poured over the altar, enveloping the Mekal who was still bound. But the inundation of black horrors did not stop here. It quickly found the break in the glass barrier and flowed through it out into the room.

Anyone who has read about the Ledi knows what these minute furies are capable of when their blood-lust is aroused. We did not hesitate. There was only one of the several doors that led out of the sanctuary open, and though it was not the one through which we had entered, we took advantage of it.

Parks was in the lead racing down a narrow, rocky passage. My legs still numb from the tight bonds which had been fastened about them, I stumbled in his wake. I had no time to ponder the eccentricities and strange whims of my peculiar companion.

There were agonized cries filtering down to us from the rear. Doubtless the Queen was among those who were dying under the myriad, clicking jaws of the Ledi.

We came upon four men who sought the cause of the disturbance. Parks shot two of them down and disposed of another by knocking him into a comatose condition with his fists. A kind of fury possessed me, and I made short work of the last.

Shortly thereafter we detected a soughing, rustling sound in the tunnel behind us. The Ledi were nearly upon us. And now a chasm, the bottom of which was lost in darkness, yawned at our feet. What the exact purpose of this peculiar trap was, I cannot guess. Twenty feet beyond, the tunnel continued. There was only one way to cross the pit—by jumping. On the moon where gravity is only one-sixth that of the earth, there was nothing impossible in the undertaking.

But the fact that we must take the unconscious Joywater with us complicated matters. The most feasible solution was for one of us to cross the pit, and to have the other toss the youth to him. At my insistence, Parks was the first to leap the pit. By going back a short distance and getting a running start with the boy, I successfully accomplished my share of the task. All went well until it was my turn to cross. A slight miscalculation when I leaped, caused by the numbness of my legs, made me fall a little short of my mark. My shin struck the sharp edge of the chasm's brink. A sharp pain assailed me as I heard the bone snap. My head whacked violently against the stone floor.

I must have been senseless for a considerable time, and my brain cleared slowly. I have confused and blurred

memories of lying prone on soft cushions within a caterpillar . . . of thumping and swaying over lunar wastes . . . then the lights and noises of Tycho . . . the quiet cleanliness of a hospital.

IT was days later, I knew. The nurse had just told me that Jack Joywater would recover from his injuries and that he could be cured of the drug habit. Then she announced a visitor.

Parks did not wait for me to give any expression of my surprise at his coming. He approached my bed with a triumphant smile on his face and tossed a folded paper on the bed covering.

"Congratulations, Grey," he boomed jovially. "The mine is claimed in Jack Joywater's name!"

I scanned the document tentatively, and then gave him a searching look.

"I'm thankful of course for what you have done, Parks," I said slowly. "But there are things I can't understand."

"Right! I knew that you mistrusted me from the beginning. I can explain now." He paused and stared at the floor reflectively. Then he drew a tiny golden image from his pocket and shook it in his half-closed hand.

"Yes, I did belong to the cult of Mu-Lo, but there was a reason," he continued. "You know that I am an archaeologist. When I came here to the moon I hoped to prove that it had once been inhabited by thinking beings. For years I wandered about searching, excavating, and spending plenty of money. I found nothing. Then I heard of the Cult of Mu-Lo.

"Rumors came to me that somewhere out in the desert there was a temple built countless ages ago by an extinct race of giant insects, that a secret organization made up of superstitious, though diabolically clever Orientals and psychopathic Americans and Europeans, had revived the worship of the strange god and were offering him human sacrifices.

"Naturally this information fascinated me. Exhausting all other means of locating the temple, I joined the Cult of Mu-Lo, hoping that some day I would get a chance to see the god. However, I was careful not to take any part in their evil doings. I won the favor of the Queen and the hatred of the Mekal who was suspicious of me.

"Some of the things which I did, particularly when I thrust a pistol into your spine and forced you to pose as my prisoner before the minions of the Queen, I admit looked suspicious. I am sure that, but for that act of mine, we would both be dead now. To give ourselves up was the only course we could follow, and I had no time to argue with you, with our enemies approaching. To capture you was the only solution."

"I understand," I said, "but what happened after I cracked my shin and bumped my head on the cliff?"

"I lugged you and Joywater along the passage until I came to a room with space suits in it," he replied. "Then, after I had fitted out you two and myself with them, I returned alone to the sanctuary. The Ledi had cleaned out the place. The power of the cult was completely broken for all the leaders were dead.

"Beside what was left of the Queen—only a skeleton—I found the papers and photographs of the mine." Parks drew a small portfolio from inside his coat as he spoke. "I also found this," he said, tossing a diadem of thin, flexible metal upon the bed. There was a glorious blood red ruby set in one side of it.

"It is the gem the Queen wore," Parks told me with a triumphant gleam in his small eyes, ". . . . the sacred gem, the Eye of Mu-Lo! No one may guess how many millions of years ago the insect men dug it from their native mountains."

He was holding up a pair of thin silvery tablets with hieroglyphics engraved on them. "I discovered these in a niche in the wall of the sanctuary. Possibly they are histories of our friends. I hope so."

Parks gave me only a moment to look at them. Then he packed them away in his portfolio. "Good-bye, good luck, Grey," he said shaking my hand. "Maybe I'll see you again some time?"

"Where are you going?" I inquired.

"Back to the temple. I intend to do some excavating."

"You ought to slow up on that sort of thing, Parks," I advised. "I don't like to predict calamities, but if you keep on that airless wilderness will get you."

Parks had looked away. His wrinkled face seemed drawn and tired, and his bulky, muscular body was stooped. His drab grey suit was wrinkled and unpressed just as it had been the first time I had seen him. Over it, it seemed that a faint chalky dust had settled—the dust of the rays of Tycho. At that moment I knew Parks to be a child of the moon. Its empty plains and lonely craters were life and love to him.

I thought I heard him mutter: "So best."

The door closed softly behind him as he left the room.

THE END.

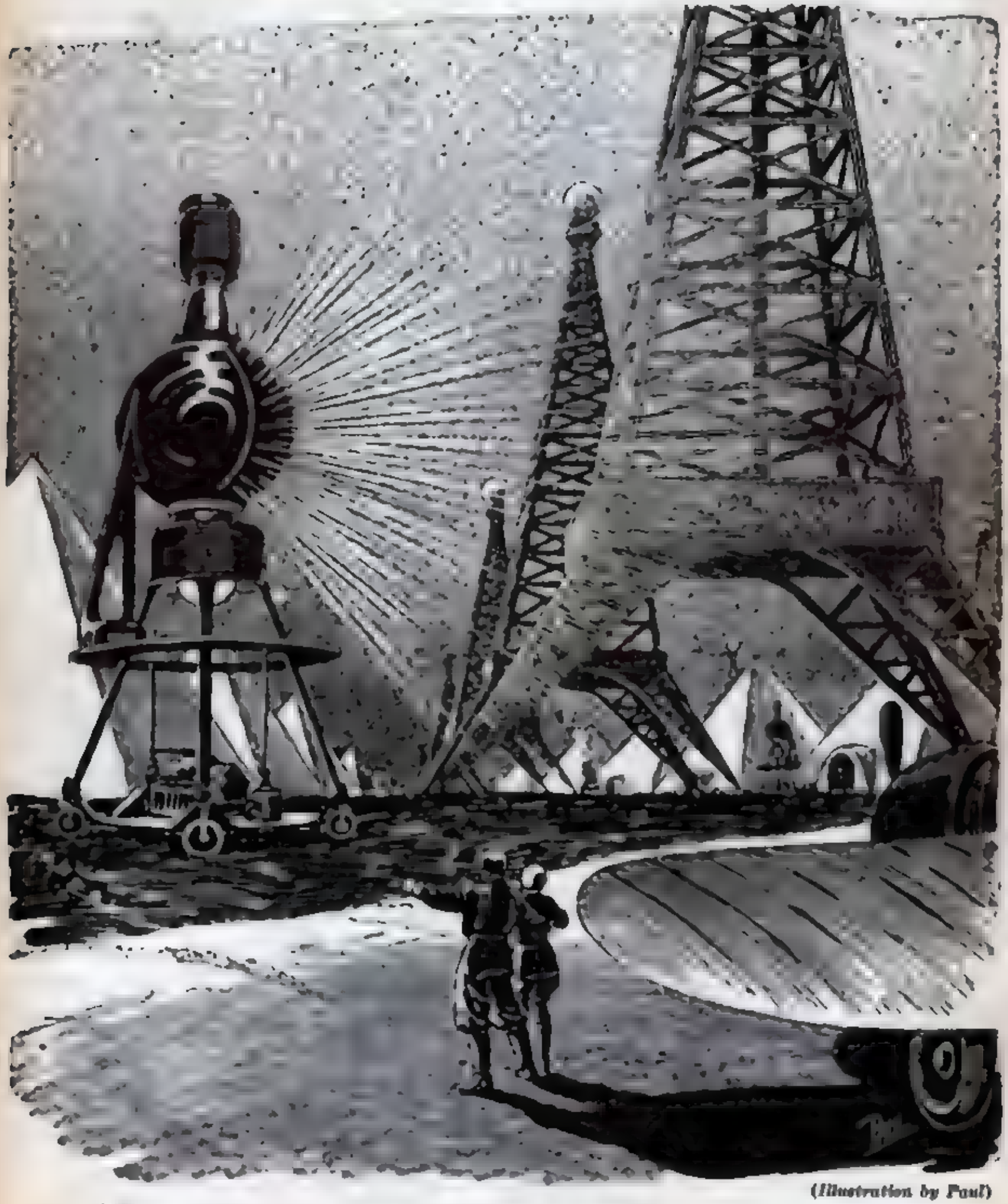
AIRSHIPS CAN'T ANCHOR ON EMPIRE STATE BUILDING

THIS absorbing topic will form the basis of a new and novel prize contest in the May issue of EVERYDAY SCIENCE AND MECHANICS. You interplanetary enthusiasts who believe space ships traveling at several miles a second will make a graceful landing on the moon every time, read the article by Hugo Gernsback on the difficulties of even utilizing the famous Empire State Building tower for airship mooring. Then exercise your ingenuity to the (profitable) task of finding the solution. It is all explained in the May issue of

EVERYDAY SCIENCE AND MECHANICS

WHEN THE EARTH TILTED

By **J. M. Walsh**



(Illustration by Paul)

An instant the buildings shimmered in the sun like dissolving ghosts. Then where they had been was nothing save brown patches of earth.

WHEN THE EARTH TILTED

by the author of "Vandals of the Void," "After a Million Years," etc.

FROM the point of view of an astronomer on one of the other planets, the great comet would seem to have done little material damage to the Earth. It would scarcely be correct even to say that there had been a collision. The comet had merely brushed our globe in passing. That sort of thing has probably happened before in terrestrial history and, no doubt, may happen again.

For some reason the Earth tilted a little as a result. The tilting expressed in set figures would seem slight, but so nicely adjusted are the balancing forces of our system that anything that tends to throw them out of gear gives rise to results altogether disproportionate to the cause.

There had been earthquakes and tidal waves, and in the cities where men were gathered together in any numbers, there were fires on a scale never before experienced. In places the water advanced and covered the land; in other places there had been recessions, and new lands still dripping with the ocean's slime had emerged from the deep. The balance of the planet had shifted and in shifting the configuration of its surface had undergone a change.

In the process a number of things had occurred. A goodly part of the civilized communities had been wiped out by disaster and disease; essential services had broken down and thrown men back on their own resources to fight the terrors that arose. The death-rate mounted into appalling figures; food was hard to get and not good when obtained; and all over the world the climate altered for the better or the worse, according to each country's distance from the equatorial line.

New Zealand and a lot of the islands in the South Pacific were shattered and rendered almost uninhabitable. Some of their inhabitants were lucky enough to escape by air to other, less unfortunate countries. But for that fact this story might have had to take a different turn.

Other lands grouped about the Southern Ocean, the tip of South America, the southern shores of Australia—places like Kerguelen Island, presently began to experience weather warmer than they had ever known, alternated later by spells of icy blasts. Long before men began again to explore, the inference was obvious.

The age-old snows and the steel-hard glaciers of the Antarctic continent were melting under the tickling rays of a sun that now fell on them with an almost tropical directness; the resultant waters were pouring over the heights and into the ocean in a flood that wrought cataclysmic changes in the lands they touched. For a time it lowered the average temperature of the southern seas and the countries abutting on them, and seemed like to complete the work of devastation the comet's advent had begun.

J. M. WALSH

THE preservation of life is said by biologists to be the fundamental instinct of all animal life including man. And when life itself is at stake, the veneer of civilization vanishes and man becomes the beast. This is no less true of a race than it is of an individual; and many wars, including the present conflict in China, is being fought because of a belief that racial survival is at stake.

Suppose then that in all the earth there was only one source of food, and that it could support but one of two dominant races. It is obvious that the race in control of the food supply might fight with relentless ferocity to maintain its source of life. And the other race, what would it do under the circumstances?

Mr. Walsh in this unusual story has a new answer to this intriguing problem, and he shows how science can settle it, perhaps to the satisfaction of everyone concerned.

But presently that phase passed, and the world began a period of readjustment. It was savage, uphill work. The erstwhile fertile countries were so no longer, and lands that had long been looked on as the last stronghold of a ruthless Nature were now, climatically speaking, those most suitable for human occupation. Oddly enough in a world whose population was but a shadow of its former greatness, the pressing problem became that of finding room and food for those that were left.

In America the Mississippi Valley had become an arm of the ocean; the Amazonian swamp had returned to its ancient state of a sea communicating with the ocean on the Atlantic side. In Africa the Sahara was under water. Europe was a cracked and broken chaos. In Asia, Japan had sunk beneath the waves while off the Philippines a new land had appeared. On the mainland itself, conditions were indescribable. Anarchy was rife; famine and pestilence stalked through the land. The Australian continent had been split in twain along the rift line running north from Spencer and St. Vincent Gulfs, and the waters of the Arafura Sea now mingled with those of the Southern Ocean in a vast swamp that was once the desert interior.

In such a state it was no wonder that the thoughts and presently the eyes of men should turn to the vast Antarctic continent at the foot of the world as a land from which, perhaps, the salvation of the remnant of mankind might come. It had already been inferred from the altered climatic conditions that Antarctica must now be temperate,

if not verging on tropical. New ice lines were forming in regions that had once been hot, and it now appeared as if the Earth, once its initial reeling and tilting was at end, had turned almost completely over and everything would have to be oriented afresh.

During the years of struggle and reconstruction stray aviators had flown from time to time over Antarctica. Their tales conflicted and were in the main disbelieved. Yet there was a certain progressiveness about their reports that might well contain a germ of truth. They ran from, in the earlier reports, the mingled chaos of a damp and dripping land steaming in heat, to a later tale of cultivation, of green and smiling country with a certain orderliness about its arrangement. But this latter, mostly because Antarctica had never been inhabited, and even if it had no man could have lived there through the chaos of the years of adjustment, was regarded as a fabrication. The skeptics pointed out that in no case had an airman landed, and that all observations were made from a height and a distance that left ample room for errors of fact and deduction to creep in.

The matter was in this state when a joint council of the provisional governments of Pan-America and Australia announced an expedition had been prepared and was about to take the air to settle once and for all the points of controversy. Hope took on a new lease. If the story of this green and fertile new land proved to be true the troubles of the struggling, ill-fed population of the shattered world were within measureable distance of their end.

KERFORD SANSEN wiped the steaming dampness from his goggles for the tenth time in the last half hour, and stared down at the fleeting world below the passenger plane. It was his first glimpse of Antarctica since the world had tilted. Once before he had flown over a portion of the continent in those days, only six years away though it seemed ages, when the land below was frowning and ice-rimmed. Now the scene had changed. The league-long rollers still thundered at the base of the massive cliffs, thundered more now that the ice had gone, but the grimness had gone from the land. There was eternal summer in the air, at this particular point a steaming dampness that suggested jungle and lush vegetation.

The girl at his side, a member of the Pan-American delegation, spoke. The newly-fitted silencers on the engines of the plane so muffled down the noise that she was able to talk and be heard in an ordinary conversational tone.

"We should be there soon," she said.

"Where?" Sansen queried with a half-smile.

"This land of greenery and cultivation," she answered. "If there is any such place," she added, though it was plain enough from her tone no less than her expression that she gave little credence to the tales that had reached the outer world.

"You don't believe then?"

She shrugged her shoulders. "Do you?"

Sansen's face grew serious. "I have an open mind on the matter. If anything I lean towards belief. There are so many wonderful things in this world, there have been so many things forgotten . . . My own people . . ."

"Of course." She took him up quickly. "You have Maori blood in your veins. You are one of the survivors of the New Zealand disaster, those who escaped by plane."

He nodded. "And my people," he said steadily, "come of an ancient race, one that perhaps unfortunately has degenerated in the course of time. We are one of the surviving colonies of the lost continent of Mu, a people whose science was ahead of anything our modern world has ever known."

Another time she would have felt inclined to throw doubt on that, at least challenge his statement. But since the cataclysm the world had seen so many queer things come from the depths of the sea, new lands that were portions of old, lands not yet fully explored, things that showed the old legends were not entirely myths, that she held her tongue and instead stared out over the side of the open passenger plane. The other members of the flight—six planes in all—were flying level but behind the leading machine. She gave them a glance in passing, then stared down again at the mist-wrapped surface of the land below, and abruptly she clutched Sansen's arm.

"Look," she cried, "did you see that?"

He had not; so she told him briefly what had caught her eye. A rift in the warm mist had for an instant revealed something whose outlines seemed vaguely familiar, yet in a way oddly strange. She was not prepared to swear to what she saw—she doubted her own senses in the matter—but she was of the opinion that she had caught a glimpse of a building, bright, new and shining . . . a building reminiscent of a pyramid, yet with a queer difference.

It was Sansen's turn to doubt. Such a thing presupposed a settled and established civilization. Antarctica had none. Nature plays queer tricks, is no mean sculptor herself he reminded her. He instanced many queer shapes that the elements had wrought from the living rock, the elephant-shaped headlands of parts of Africa for example. Then there was that sphinx-shaped rock crouched above a Tasmanian river, so done that no one had ever been able to decide of a certainty whether it were a freak of Nature or the actual work of some forgotten race of men.

He essayed to settle the question then and there by getting into communication with the rest of the fleet. None of their colleagues in the leading plane had seen anything, though most of them frankly admitted they were not looking. Observers in the other planes were no more helpful, with the exception of one man who thought he saw the glint of sunlight on something below, though the thing passed so swiftly that he was not prepared to swear to anything.

The girl, however, seemed to have shed her incredulity. She watched the billowing clouds below with a greater eagerness now, and when at last the view cleared it was she, simultaneously with the observer, who drew attention to the altered prospect.

The billowing clouds which had succeeded the steaming mists of the coastal region ended as abruptly as though they had been cut clean through by the stroke of a naked sword. Beyond them—it was as though one were looking over the edge of a high wall—lay a sight that for the moment dazzled the eyes and made each one who saw it doubt the evidences of his senses. Trim, well-kept, orderly cultivated land—that in itself was not surprising seeing the barely-credited tales that had come through. But the shock lay in what else the landscape held.

GIANT pyramidal buildings, vast glittering structures of unknown purpose and composition, were scattered

at great intervals as far as the eye could reach. It might be that each of itself was a small town set in the midst of its cultivated section. That seemed a reasonable conclusion. In between were spidery Eiffel tower-like erections, each one with a glowing golden ball at its summit. Their purpose was elusive. They might be lights, some type of power-plant, or quite equally something else whose exact nature would not immediately become apparent. Actually the sight of the golden balls hurt the eyes, so that it was impossible to look at them long enough to decide their functions—if indeed a mere superficial examination could do anything of the sort.

Abruptly the blinding golden haze that sprang from them darkened and became an angry red. At almost the same instant the motors sputtered and died. Someone cried out in pain as the nearest ball thrust out from its now red center a long beam of light, a shade or so brighter than the source from which it sprang, that hooked on to the foremost plane like a giant finger. The plane rocked violently, like a ship in a heavy sea, then was drawn gently yet relentlessly down to earth.

Sansen, flinging a glance back over his shoulder, saw that other fingers of light were clutching the remaining planes and hauling them down as a boy hauls down a kite by its string.

The plane rocked again. The girl was flung against him, and she clutched him in the wild terror of the moment. The earth was very near, but there came no shock of contact. The plane came to rest as gently as a bird alighting.

They had landed near one of the vast pyramidal structures, in a cleared space in front of it, and at some little distance away from the nearest tower-like structure. An opening, a door of some sort, showed in the wall of the pyramid facing them. People were coming out of it.

At the sight of them Sansen gasped. They were like no earth-people of whom he had any knowledge, yet something anciently unfamiliar, but as yet dimly understood, started uneasily in the hinterland of his mind. The smallest of the dozen or so beings—it was impossible to say offhand whether they were men or women—who were emerging from the pyramid, must have been at least seven feet high. In color they were white—milk-white skins and blue eyes as the explorers were to learn. Their dress seemed simple yet serviceable, a type of garment not unlike the Roman toga, yet shorter and allowing more play for the limbs.

Sansen tried to move. He had some idea of getting out of his seat, and, as the leader of this expedition, meeting the advancing party standing. To his surprise he found he could not move. Minor muscular movements, the turning of his head—things like that were permitted him—but his arms and legs seemed paralyzed. Then it was he realized that the red finger beam had changed both its shape and color. It was a dull orange, and more fan-shaped. In some indefinable fashion he got the idea that it was now a spray of sorts, designed to numb them to helplessness.

The girl, Vida Weston, spoke in his ear. "What are they, do you think? What are they going to do with us?" There was no fear in her voice, only a good deal of curiosity.

"I don't know," he answered truthfully enough to both questions. But that insistent yet elusive sense of familiarity still pulsed at the back of his mind.

All the planes of the flight had been grouped closely together by the force which had drawn them from the sky. But by some species of unerring instinct the advancing folk headed for the one Sansen was in. They halted a dozen feet away. The leader, a man a foot taller than his companions and with a calm inscrutable face, studied them for the time a man would take to count ten; then his hand went up abruptly in a gesture that was evidently a command. The orange light that had held passengers and planes in its grip passed as suddenly as though it had been turned off at a switch. Sansen found his movements were no longer constricted.

CHAPTER II

An Amazing Revelation

THE leader of the strangers spoke. His words were unintelligible to the girl and the others, but something in Sansen responded to them, albeit in a puzzled fashion. He even seemed to understand a phrase here and there. An odd word, strangely familiar, strangely like words of the Maoris, whose blood ran and commingled in his veins with that of the European part of his ancestors. Pictures of half-forgotten things flitted before his eyes, old legends but dimly understood, now seeking to clothe themselves in the reality of the flesh.

He answered stumblingly, haltingly in that island Maori that once was the language of the greater part of Polynesia—that some would have is the oldest of surviving spoken tongues. The stranger people listened in puzzled silence. Words they seemed to understand, again it was obvious they sensed the drift of certain phrases Sansen used, rather than understood what he was saying. And yet again in other phrases they failed to follow him. It was a tedious business, this conversation, if one can call it that, but in the end some finality of understanding was reached.

Sansen turned to the others who had crowded round him from their own planes while the interchange was progressing.

"I can understand part of what they are saying," he announced, "and apparently they got the drift of my remarks. The long and short of it is that though we're scarcely welcome visitors, they've given an understanding that we won't be harmed as long as we behave. I don't know what that implies, and I think it wiser not to ask a more explicit definition. But I think you can take it from me that they've the power to enforce their requests. We've already seen one demonstration of what they can do. We're all more or less scientifically-minded here, and as we're strictly on a mission of inquiry and exploration we're not likely to make any bad breaks. So I thought it safe enough to give them the assurance they asked that we'll conform to the customs of the country. That do?"

He looked round the circle of his colleagues. In practically every face he read approval of the course he had taken.

"Who are they?" It was an older man, one Gosling, who asked that. He had been a polar explorer in the days before the cataclysm. "What prior rights have

they to this place? I've been here when it was a frozen waste without any inhabitants at all. We've just as much right as they, perhaps more." He flung a glance round. "It looks like a fertile place, the sort the starving populations of our own lands would gladly fight for."

Sansen frowned. "I think," he said soberly, "that we can discuss points like that later on. We mustn't let them think there's dissension in the camp . . ." He stopped with a feeling that the phrase had been unhappily chosen. "I mean if they understood what you're suggesting it might mean the end of us . . . and hope."

Gosling looked at him with quick suspicion. "You seem to be on their side from the start. How do you know their language?"

"It's mine, too, in a way." Sansen did not elaborate the explanation but sheered off at a tangent. "They want us to go into the pyramid," he said addressing the others. "We will be perfectly safe, and our planes won't be interfered with."

"I think we should do what Sansen suggests," said one of the others. "We're in their hands, and they possess powers that we don't rightly understand, but they seem disposed enough to treat us in a friendly fashion so we can very well leave anything of a controversial nature until we find out just how the land lies. What do the rest of you say?"

There was more or less perfect agreement with that, spoken or implied. Only Gosling seemed inclined to maintain his point, but subsided into silence before the will of the majority.

The strangers had up to this been waiting without any sign of impatience, but now their leader flung a glance up at the sky where the sun was dipping towards the west. He signaled Sansen that the party was to adjourn to the pyramid at once. None of the plane party was armed—that had not been considered necessary when the expedition had been organized—and more than one there entered the pyramid with the feeling that they were already prisoners caught in the most hopeless of traps.

A race that could appear out of nothingness and in the short space of some six years transform a frozen continent into a garden would not readily surrender the land they had won. The chances were that the moment they more fully understood the objects of the expedition, they would resent the presence of its personnel and register their objections in a fashion not likely to be misconstrued.

But nothing of this appeared at the moment. The pyramid was a small city in itself. There were ten of them scattered about the particular area over which the planes had flown, and the average population of each appeared to be about five hundred souls. It was noticeable that there were no old or middle-aged people about. All the expedition saw were young men and women in the prime of life. There was a reason for this, as presently appeared.

NIGHT fell outside, but the interior of the pyramid remained as bright as day, its many corridors lit by some species of artificial light that seemed electrical in its nature. If so, the inventors of it must have found a new system of diffusion as there were no signs of the customary lamps that were the first things Sansen's party looked for.

They were made comfortable in some sort of community room, given rather appetizing food to eat, and then left to their own devices for the time being. The party broke up into little groups, and Sansen and the girl talked very earnestly in the corner for long. What they had to say is not material to this story at the moment. The burden of discussion among the others, however, was that little or no enlightenment had yet come to them as to the origin, intentions or title to this part of the world, of the people whose guests, under duress, they were.

Sansen's sole contribution, when they broke in on his talk with Vida Weston to ask him for any information he could give, was that their hosts spoke a language like an archaic form of Maori or Polynesian. More than that he did not care to say at present, though he was beginning to feel that some of the ancient myths were not so mythical as might be imagined.

The chances were that he might have enlarged on these for the benefit of his audience had not an interruption occurred before he could get well started. One of the stranger-folk entered the apartment, beckoned Sansen to him, and spoke a few words haltingly.

Sansen turned. "I'm wanted for some sort of an audience," he announced. "I'm told it won't take long and when I come back I'll be able to make clear a good many things that are puzzling us at the moment."

The girl made a movement as though she intended accompanying him, but he shook his head.

"Better stop here," he suggested. "They've asked only for me. We'll all be safe as houses, never fear."

He went out with the attendant and was away a good deal longer than he had expected. But what happened to him and what he learned had better be told here now instead of as he related it to his colleagues on his return.

Sansen was led down many passages, bright-lit corridors with open doors leading off them. He passed rooms that seemed stored with apparatus that made his scientific mouth water, and that he would have given worlds for a chance to examine at his leisure. The very material of which the pyramid and its interior compartments were made was strange though, like everything else, it had a haunting air of half-forgotten familiarity about it. The journey was practically over before a raking in the backreaches of his mind brought to light the possibility that it was *orichalcum* the metal whose secret was supposed to have been lost when Atlantis dipped beneath the sea.

But if so it was *orichalcum* treated in a way that gave it a singular beauty of its own even when no design had been fretted into its surface, that made it as soft as rubber to the touch while at the same time rendering it practically indestructible. He learned later that the adverb was more than justified, almost at the time it dawned on him that he was up against a bigger thing than anything that could possibly have come out of lost Atlantis.

It was then he had cause to thank the stars that the odd trace of Maori blood in him had preserved in his memory a working knowledge of the ancient language of New Zealand and more than a tattered remnant of her legends in his mind.

Of a sudden the passage took an abrupt turn and ceased to be. They had come to a vast hall that formed the core of the pyramid. He had expected to be dazzled by what he saw, but he was merely puzzled. The decorations of the place were simple to the point of bareness, an austerity about them that froze his soul. Flanking the entrance

were two bronze statues, one on either side, and he turned to look at them as he passed.

He had seen something like them before, for each was a replica of the other, this bronze figure seated in the lotus with the triple-pointed crown upon its head. Man or woman, it was hard for the uninitiated to say at first glance, but in Sansen's mind there was no doubt that it was meant to be a woman, the mistress of the world 20,000 years ago.

But before he had time to absorb properly what he saw, his attention was caught by a gathering at the far end of the room. His guide signed to him that here was their destination, and he pressed forward. The little gathering parted. Here was no throne with its trapping of royalty or the decoration of vice-regal state. Instead he saw a table littered with thin sheets of metal that might well take the place of the papers of a more modern day.

At the table sat a man who looked no more than thirty-five years. Actually nearly four times as many centuries had passed since first he saw the light. That was one of the revelations for which Sansen was half-prepared, but that somehow staggered him when it came. In the abstract he could give it credence, but when he looked at this fresh-faced man across the table from him, his doubts and bewilderment grew.

HE was given a seat, and then began the long process of question and answer, of examination and cross-examination of which only the merest ghost of a precis can be given here. Despite the blood relationship between Sansen's island Maori and the archaic language of these strange beings, communication was a matter of considerable difficulty. As Sansen put it later, it was like a modern Italian and a Latin of the Roman Empire attempting an interchange of thoughts. The medium worked in the absence of anything more suitable, though it made for neither clarity nor speed.

Sansen detailed as well as he was able, without divulging too much—so he thought—the objects of the expedition. He found his questioners interested as far as they were able to follow him. It dawned on him as the examination progressed that they were without any very clear knowledge of the conditions in the outside world, though intuition apparently aided them a good deal in bridging the gaps.

The surprising part of it all came when the man at the table—as near as Sansen could get to it his name seemed to be Ken-chu—gave some account of his people's history. They were one of the numerous, world-wide colonies of Mu, the mighty mistress of the globe, that lost continent of the Pacific that disappeared between 15,000 and 20,000 years ago.

The disappearance of the motherland had thrown them back on their own resources, but they might have got along all right, had not something akin to what had so recently happened threatened to alter the balance of the earth. It was not quite plain in what exact fashion this had come about, but seemingly these colonists of Mu had had warning. They were able to make their preparations. The vast pyramidal buildings were strengthened against the onslaught of the cold, the people gathered in them, and placed in a state of suspended animation, probably by use of a drug whose exact nature did not transpire. For reasons that will appear later the moderns were never able to learn just what it was.

Then the deadly chilling cold that made a frozen desert of Antarctica came down, and the once fertile land lay buried beneath seemingly eternal snows. Sansen surmised that the trouble was probably due to the same comet the earth had encountered a few years back. If so, seeing that the period of its return was something in the neighborhood of 15,000 years, its orbit must be of remarkable extent.

The return of the comet—in the absence of more precise data one must assume that both calamities had the same origin—did precisely what these children of Mu had anticipated. It altered the balance of the Earth once more and brought back the cycle of semi-tropical conditions to Antarctica. Then came the awakening of this prehistoric people—no doubt the drug was such that the increasing power of the southern sunlight, filtering in through specially-prepared suntraps in the pyramids, gradually roused the sleepers from their state of suspended animation—but they came back to find that certain things they had not anticipated had happened in the interval.

For a start there had been upheavals of the land, mountains had been raised and in other places the level had fallen, and in the process a great many of the pyramids had been wiped out of existence. Probably glacial action had something to do with this, too. At any rate not thirty per cent of those who had gone to slumber the ages away awoke again to the new life. The drug, too, must have possessed some deleterious properties. The very old and the very young had passed out for good under its influence, and it was only those in the prime of life who had survived.

Summed up the situation amounted to this: the people of Mu found on their awakening that what they had at first regarded as a calamity was a blessing in disguise. Due to certain natural causes and changes in the terrain in the interval, the Antarctic continent was no longer capable of supporting the prolific life it had previously. Though it was once again one of the most fertile parts of the earth, the area that could be cultivated was still limited and science had not yet got to the point where food could be manufactured synthetically in any great quantity with any hope of continued success.

It was right there, despite the awkwardness of the medium of communication, that Sansen began to scent trouble. It was almost as though Ken-chu were hinting that Antarctica belonged to him and his people, and those others the expedition represented must steer clear of the place and manage as best they could. Sansen thought of the years of starvation ahead in that case, and his face fell. He could not envisage a world grown desperate standing idly by and seeing this land of plenty in the hands of others.

Whether they guessed what was passing in his mind, or merely wished to warn him in advance of what would have to be faced, may never be known. At any rate certain little demonstrations were staged here and there. He understood very little of the principles underlying what he saw, but he says they possessed a species of death-ray that could be made to disintegrate matter with which it came in contact into an impalpable dust. Two rabbit-like animals were brought into the hall for demonstration purposes, one with a queer white marking on the dark fur of its forehead, and the other possessed of a lop-ear.

Sansen noticed that particularly at the time. Afterwards the point proved to be of considerable importance.

The narrow needle-like beam of the death-ray was turned on them and they vanished. The stranger-folk had already shown by the way they had brought the planes down that they knew how to stop a motor. Apparently they did this by draining the batteries by means of the beam they directed. At any rate all the batteries had to be re-charged before they would function again.

CHAPTER III

"It is to be War!"

IN some respects their science was of a very high order. The towers themselves, Sansen learned, were contrivances partly for storing energy obtained from the sun itself, and they could also be used for the purposes of light, power, protection and occasionally the stimulation of vegetable growth. On the face of it it looked as though the colonists had somehow harnessed the cosmic rays and turned their energy to account after first extracting their sting.

In the days that followed a good many things were learned by the delegation. Few of them, from the point of view of the people in the world outside, were at all pleasant. The Mu-ians—a clumsy designation that must do in lieu of a better term—took the stand that this was their country and they pointed out, not without reason, that it was not capable of serving both their needs and those of the people the expedition represented.

They were not heartless, they were merely following out the application of the first law of nature to its logical end. If other races, of a younger vintage, suffered in the process it was regrettable but could not be helped. Someone had to suffer.

Having made that plain, Ken-chu suddenly announced one day that the planes were ready and that as the expedition had had time enough to make contact with the Mu-ians and give an account of their civilization and its superiority over anything existing in the outside world, the sooner they took themselves off and made report in the proper quarters the better.

As it was well into the second month and they were several weeks overdue, the delegation found no fault to find with the intimation that they were at liberty to go. All along the Mu-ians had treated them decently and with an unfailing courtesy and an extreme readiness to explain through the medium of Sansen almost everything that was asked. Nevertheless it was obvious they were glad to see them leave. Only when it came to Sansen's turn did Ken-chu show anything like regret. The bond of blood, thinned out by the intervening centuries though it was, had made them friends of a sort.

The meeting of the joint council of the provisional government that received the expedition's report was held at a spot not far from where Buenos Ayres had stood in the days before the world tilted. At the moment it was the administrative center of the Pan-American government. Actually there were two reports put in, Sansen's and what might be called a minority report emanating in the first instance from Gosling and a few adherents he had secured. This latter followed the broad outlines of Sansen's statement; it was in conclusion drawn from matters of fact that it differed. There was even a hint that Sansen, because of his alleged remote kinship with these people, had been inclined to stress Earth's inability to do anything against them.

It was a curious commentary on the collective mind that while the peoples of the shattered world had clutched at the tale of the new and fertile land as a drowning man clutches at a straw, they were inclined to scoff at this yarn of a race 15,000 years old being in possession of the continent they covered. Only gradually were they persuaded of the truth of this part of the two reports.

Then, however, they changed to a quick rage against the Mu-ians. The end was inevitable. The council would have been forced to a decision in the long run had they not anticipated popular clamor by a mere matter of days. The Mu-ians were to surrender Antarctica to the peoples of the world; if not peaceably it would be taken from them by force. Because of the difficulties of transport and communication they were allowed a week in which to answer and the ultimatum and reply were to be conveyed by Sansen.

A good many distrusted him as a messenger, but their fears were quieted by others who pointed out that it did not matter much. The fact remained that the Mu-ians were going to be cleared out anyway, but according to the polite usages of war they should be given a chance of going quietly if they wished. The point everyone seemed to have overlooked in those mad days was where exactly the Mu-ians were to go in the event of their surrendering. It is certain that no one, not even in wildest dreams, anticipated what was actually to occur.

Sansen took off in a small plane, unaccompanied. From the fact that he had been ordered to go alone, together with sundry other things that had come to his knowledge, he concluded that he was not expected to return, and that at the end of the set period the attack would be launched. Should he be detained as prisoner by the Mu-ians—a not unlikely possibility—he felt certain that would be used as an excuse to precipitate the conflict. It was madness, he knew, and a form of mania from which he and the more balanced members of the expedition had tried to wean the joint council from the very moment the suggestion had been first mooted. It could only end in disaster . . .

HE climbed to the higher levels with a heavy mind and a sad heart. Not only was he troubled over the mass attitude of the world he had been born and bred in, but he had a more intimate source of sorrow. His colleague, the girl Vida Weston, in whom during the weeks they were thrown so closely together he had come to take more than an ordinary interest, had consistently and deliberately avoided him ever since the choice of delivering the ultimatum had fallen on him. He wondered if she blamed him, for he knew that she was one of those who counseled that no action should be taken.

He was an hour out from the base when that happened which gave him the second biggest shock of his career. The greatest was to come later . . . But that is running ahead of the story.

It was the feeling of another presence and the touch, as he fancied, of a finger on his shoulder that for the smallest fraction of a second sent the quiver of a scare through him. He glanced round quickly.

The girl, Vida Weston, was crouching in the passenger seat behind him.

"You!" he gasped. "What are you doing here?"

Her eyes dropped before his. She answered, "I stowed away, crawled in and hid under the seat when no one was about. I've been there . . . cramped . . . for hours."

"Yes, but why did you come?"

"Because"—there was hesitancy in her voice—"I do not think they expect you to return. There are some who distrust you, because of your remote kinship with these people, and will be glad to be rid of you and your warnings to go cautiously. Perhaps they hope the Mu-ians will hold you as a hostage for Earth's good behavior."

"I see." He nodded. "And if Earth doesn't behave—put it that way—I won't be any loss. I fancied as much. But"—insistently—"why did you come, really?"

She did not answer that. Sansen locked the controls of the plane, turned and caught her in his arms. There was no need of further explanation between them.

Seemingly they were expected, or perhaps they had been seen sooner than they thought. At the edge of the cloud-wall the plane was picked up by the finger of light and drawn gently down in front of the central pyramid. Ken-chu was there to meet Sansen, but when he saw the girl he gave a little frown. Her presence suggested complications.

"It is to be war," Sansen told him as briefly and as clearly as he could in a language in which he still fumbled occasionally for words. "Our people want this fertile land for their own sustenance. You claim it is necessary to you—as I believe it is—and therefore there can be but the one ending to things."

"Come"—Ken-chu indicated the pyramid—"we can talk of matters there at our leisure. At least there will be no war, only stalemate."

He looked questioningly towards Vida, and Sansen explained her presence as well as he could. Ken-chu seemed satisfied. Sansen even noticed when next he looked at the girl that his eyes appeared to hold approval.

"There can be no war," Ken-chu emphasized when a little later they had taken their places in the central hall that was the core of the pyramid. "We do not wish to kill. We desire merely to live in peace in this land that is our heritage. Should we be attacked, as you say will happen, we can defend ourselves bloodlessly. We can put the planes out of action in the way you know of."

Sansen fidgeted. He did not think the solution would be as easy as that.

"There is one thing it seems to me you are both forgetting," the girl said when Sansen had given her a running translation of the discussion. "Antarctica is necessary to the existence of Ken-chu's people. For at least the next ten years it is necessary to the existence of our peoples. It will take that length of time for world production to catch up in the shattered world with the demand for food stuffs. That is the difficulty you have to face, starvation for one or the other."

"Your mate speaks the truth," Ken-chu commented when Sansen translated. "There is not room for both our peoples, yet short of war and wholesale slaughter there seems no solution. I say there shall be no war, yet . . ."

"Yet in that case," Sansen picked him up quickly, "you condemn millions to death by starvation."

"There is no alternative. Even with our advanced science the process of reclamation is slow. We cannot make two blades of grass grow at once where none have grown for aeons. We must hasten slowly."

"And your answer then?" Sansen queried.

Ken-chu smiled wryly. "To this ultimatum? I can give none now. It is a matter to be considered by others of my race. Perhaps in a few days . . ."

HE stopped abruptly, his gaze centered on a point a few feet away from them. The others turned quickly. On the polished floor a small animal was crouching, perfectly visible in the bright light of the interior. It was an animal resembling a rabbit with a curious marking, not unlike a white splash showing distinctly against the dark fur of its forehead. As they watched, another animal of the same kind, distinguishable by the fact that it had no markings but a lop-ear, appeared suddenly beside it.

The three gasped. The animals seemed as though they had materialized out of empty space. There was nowhere else they could have come from.

Ken-chu blinked, stared at the animals, then blinked again. An expression of amazement crossed his face.

"If it wasn't so flagrantly impossible," Sansen said in a hushed voice, "I'd say those were the very animals you annihilated with the death-ray during that demonstration you gave us eight weeks ago."

Ken-chu looked at him oddly. "You think that?" he said.

"It can't be," Sansen admitted, "but for all that they might be the very doubles, markings and all, of the animals we saw then."

Ken-chu passed that by without comment, though it was queer that from that onwards he seemed to lose all interest in the discussion and closed it down as soon as he possibly could. He merely remarked that he and his counsellors must have time to think things out.

The week dragged by on leaden wings. Sansen and the girl were given quarters in another pyramid some distance away from the main building and it was intimated to them that though they were free to go wherever they pleased within the limits of the land, the great pyramid itself was to be regarded as out-of-bounds. Their chagrin at this was rendered all the greater by the fact that the neighborhood of the forbidden building presently began to show evidences of great activity.

Sansen's only conclusion was that the Mu-ians intended taking up the challenge of the rest of the world, though he could not altogether reconcile this with Ken-chu's declaration that there would be no war and no slaughter. At the same time he had been given no definite message in reply to the ultimatum, and between it all he did not know what to make of the situation. Vida could not help with any suggestions. Her advice was to wait and see, for curiously enough her belief in the good faith of the Mu-ians appeared to increase with each day that passed.

It was on the last day of the week, with the ultimatum due to expire at midnight, that Ken-chu sent for Sansen. It was merely to request him that through the radio in the plane he would get in touch with the world authorities and ask for two weeks' grace. He would give no reason for this, and all Sansen could conclude was that that time was necessary to allow of the Mu-ian defences being made impregnable.

He passed the message on—his plane had been renovated and the batteries recharged in the interval—and was successful in getting in touch with the Council of the world governments. He was told that the answer would come in two hours' time. When it came he took it back to Ken-chu who had arranged to meet him at his quarters. It was very brief and to the point. The provisional governments had considered the application and did not feel inclined to allow an extension of the period of grace. The message added that they had no intention of giving the Mu-ians time to erect some weapon that might effectually turn the scale of the conflict, though this Sansen wisely enough decided to suppress.

Ken-chu smiled wryly when he was told. It seemed to be much what he had expected. "It is a pity," he remarked. But the exact application of his words was not obvious.

The attack came at dawn next day.

CHAPTER IV

The Great Transformation

IT was not so much an attack as an abortive attempt to break through defences that proved impregnable. The Mu-ians had altered their methods. They did not seek to bring the planes down to earth as they had on two previous occasions. They were seemingly content to keep them from doing any damage. The lights from the golden balls on the Eiffel-tower structures began by glowing a more vivid red than Sansen had ever seen them before. The finger-like rays crossed and re-crossed each other until it seemed as though the sky above the land were covered by a glowing latticework. Mostly the planes tried in vain to break through this visible field of force that protected the buildings and the fields.

Apparently the rays thus directed contained a repulsive force, the antithesis of magnetism, which was just strong enough to prevent foreign bodies from bursting through. As a matter of fact, from time to time an odd bomb found a chink in the protective ceiling and came hurtling through. Luckily none of them did any considerable damage to the defenders. Most of them burst either in mid-air or in the fields. But they showed there were gaps in the defence, and gradually it became obvious that the attacking force was concentrating above the spots where bombs had got through.

The Mu-ians reply to this massed attack was surprising swift. For the first time they seemed to take the initiative, in a way that made Sansen feel convinced that his faith in Ken-chu's words had been misplaced.

Of a sudden the entire ceiling of red rays ceased to be, then as the overjoyed planes swooped down, thinking victory had been won, other beams almost invisible against the blue of the sky shot up, and sweeping in great curves touched one plane after another.

Sansen cried out in the horror of the moment and clutched the arm of the shivering girl at his side. Unless he was vastly mistaken, the Mu-ians were breaking their definite promises to him, had swung their death-rays on the attacking fleet. The next instant he felt sure that such was the case. Each plane as the ray touched it incontinently vanished. There was no smoke and no flame. One instant the plane was there and the next it had ceased to be. In less time than it takes to tell the sky was clear.

White and shaking, Sansen sought Ken-chu. "You have broken your word," he said angrily. "You promised there would be no slaughter, yet you have wiped out of existence an entire aerial navy and the men who manned it."

Ken-chu looked up at the clear blue sky then back to Sansen and the girl. A little smile flickered about the corners of his mouth.

"I have kept my promise," he said steadily. "There has been no one killed and no machines destroyed. They have but been removed to a safe distance where for a period they can do no one any harm."

Sansen stared incredulously. "That," he said, "in the face of what we've seen is hard to credit."

"Nevertheless it is the truth," the other declared. "I beg of you to keep your faith in me intact for two weeks longer. Then you will realize that I have not deceived you." There was that in his expression which, against the evidence of his senses, convinced Sansen for the time being, though later conflicting doubts assailed him.

They grew stronger as the days passed and nothing happened. Still the signs of strange activity went on, and queer machines were erected at various points. They looked oddly like the death-ray apparatus yet to Sansen's eyes there were points of difference.

In the semi-dark of one early morning he was roused from sleep, told to dress quickly, gather his few belongings and follow the man who had called him. Perturbed by the unusual nature of the call he did as he was ordered. As he came out of his apartment he met Vida ready, waiting for him. They passed to the fields outside their pyramid. Ken-chu was awaiting them there.

"You will be free to go in an hour's time," he greeted them. "You will find all you need in your machine, also certain packets of the writing sheets of metal containing things I have not time to say to you now, things that perhaps it is better not for you to know now. For our part we have decided. Our two peoples cannot exist in the same world at the same time, so we are taking the course that seems best to us in the interests of all concerned."

"I'm afraid," said Sansen, "that I don't quite understand what you mean."

KEN-CHU smiled, rather sadly the man and girl fancied. "It will be made plain without doubt very shortly," he said. "One thing I ask you, and that is that you promise not to move from this spot until a full hour has passed. For your own well-being I ask that. At the end of that time you can do what you wish."

"We'll promise," Sansen agreed readily enough. "But you . . . ?"

"I go to do that which has to be done. Fear not, and whatever you see do not feel constrained to break your promise. Those writing sheets of which I have spoken will explain all when you have had time to decipher them."

He held out his hand. Sansen took it, then the girl. With no other farewell than that Ken-chu turned and walked away. The pair retreated to the place beside their plane where it had been indicated they were to take their stand.

The sun was now climbing over the horizon. A few minutes more and it was broad daylight. Almost the first thing that struck the watching pair was the complete ab-

sence of life as far as they could see. Usually at this hour the fields were alive with people beginning their day's work. But now none were to be seen.

Abruptly from various points the semi-invisible blue light of the death-ray machines slanted across the prospect. Gods, what was that? Each ray seemed trained on one of the buildings. An instant the pyramids shimmered in the sun like dissolving ghosts, then where they had been was nothing save empty brown patches of earth. The whole race of the Mu-ians and the buildings they occupied, including the Eiffel-tower erections, had disappeared as completely as though they had never existed. Only the ray-generating machines remained.

There came a dull thud, and on its heels another and another until one lost count. Columns of dust threw up into the air, obscuring the sun, they too slowly settled and passed away leaving the prospect deserted. Even the ray machines had gone.

Wild-eyed the girl clutched Sansen. "What . . . what has happened?" she stammered.

Sansen passed a hand wearily across his eyes. "They've turned the ray machines on themselves," he said huskily. "Annihilation, that's what it is. And they've even blown up the machines themselves by some sort of a time-fuse arrangement, probably so they would not fall into the hands of those who would use them unwisely. Now I know what Ken-chu meant when he asked us not to stir from here as we valued our lives."

Time passed. There seemed no reason why they should delay, yet there remained their promise to Ken-chu. At length Sansen turned towards the plane, thinking that no harm would be done if they clambered in as long as they did not start before the appointed time. A muffled droning caught his ear. It seemed to be far overhead and it increased in volume even as he listened. He twisted round and stared skywards. A fleet of planes, the expeditionary planes of the provisional world government, was maneuvering overhead. They moved uncertainly, with a lack of precision that he could not quite understand. Then one by one they swooped and came to earth.

Someone clambered out of the nearest plane as it came to a stop and ran towards him.

"Ho, Sansen," he recognized a man he knew, one of the fleet leaders, "we picked you up in our glasses from up there. But what the . . . what the hell has happened here? Where's all the buildings and the people and the defences that we were attacking only a few minutes ago?"

"A few minutes ago?" Sansen repeated. "You're mistaken. That was actually a fortnight ago."

The other stared at him. "Bunk!" he said.

It was not bunk. The written pages, thin metal sheets engraved with odd characters, made that clear when Sansen and his helpers, for now he found many ready and eager to assist him, managed at last to decipher them with the aid of the key to the glyphs Ken-chu had provided. The materialization of the rabbit-like animals had been the beginning of it. By rights they should have been annihilated, resolved to the elemental forms of matter. Yet here a matter of eight weeks or so later they had abruptly returned to existence in the hall that formed the central core of the great pyramid.

The apparent puzzle set Ken-chu and his fellow scientists experimenting. They discovered that it was merely a question of the rate at which the ray set the particles of matter vibrating. A shortened ray of low concentration had been used on the animals. Instead of destroying them it had speeded up their time-rate, so to speak; in plain words it had hurled them not into ultimate nothingness but forward in time.

The natural conclusion from this was the death-ray had never been anything of the sort, the probabilities were that no one had ever been killed by it, and that all the supposed casualties had simply been distributed into other time-periods.

Once the possibilities of this were recognized the Mu-ians had no longer any doubt of the course they should take. Had their period of grace been extended as they desired, everything would have passed off quietly and less spectacularly; as it was, for their own safety's sake, they simply vibrated the planes and their crews into a time-period a fortnight ahead. In parenthesis it may be recorded that the men themselves had no idea what had happened, and it took some time to convince them that a fortnight of their existence had actually passed in a flash. One and all had experienced a momentary dizziness, a sort of swaying blankness, and then once again they were flying over the stronghold of the Mu-ians, puzzled by the unaccountable change that had seemingly taken place in a breath.

To return to the Mu-ians. Their idea was a simple one. It was that they should so construct and set the machines that at a given signal they, their buildings and all their belongings not insulated against the vibratory rate, were to be hurled some ten years into the future. To their minds it was the one solution that would simply and sanely cut the Gordian knot of a tangled situation. It gave the starving world a new empty continent to cultivate and it deprived the Mu-ians of nothing. It was a solution that the world, when it came to hear of it and was at last made to understand what had happened, acclaimed as eminently satisfactory.

But a number of more far-seeing folk, the Sansens among them, are not so sure of that. One's transportation to another period by means of suspended animation is one thing, but this abrupt hurtling of a whole race forward a decade or so is another matter altogether. In itself it raises problems quite as difficult of solution as the original one it was meant to settle. The Sansens and those who think with them are wondering what is going to happen when the ten-year period has expired. Nobody else seems to have given a thought to that.

THE END

THE VENUS ADVENTURE

By **John Beynon Harris**

(*Illustration by Paul*)

The Wots seemed to break the spell that held them. They flung back their arms and a volley of stone flew through the air toward the lonely figure.

THE VENUS ADVENTURE

by the author of "Worlds to Barter"

YOU may have read in the history books of Joseph Watson or, as he later called himself, Noah Watson; but it is probable that you have not found more than a slanting reference to his exploit. History is like that. As we go on with a longer and longer written record behind us, either events must be foreshortened and incidents dropped out, or else the earlier centuries must be lopped from our knowledge.

It is too much for any but a specialist or a group of specialists to study all the strange phenomena of human history. We have, therefore, in this year, 2926 A.D., chosen the former expedient of compressing our knowledge and whittling it down to the main facts and causes, with the inevitable result that many figures, once of world importance, are now remembered only in the museum libraries.

No one, save perhaps his own followers, could have ascribed world importance to Joseph Watson, but there can be no doubt that he was a remarkable figure in his day.

He was born in Scotland in May, 2104. It was a natural birth, for in the more rural northern districts the people still clung with a Puritan obstinacy to the superstitious belief that an incubated child was bound to be abnormal in some way. The Anti-Incubation Society's pamphlets with their spurious and harmful "proofs" that no incubated child could possibly be considered to have a soul, were distributed in enormous numbers and with telling effect among the partly educated and the simple-minded. Such a prejudice dies hard and, even today, one sometimes hears of atavism to the extent of natural birth occurring in the obscurer corners of the earth.

Watson's mother paid the penalty for her crudity and credulity by dying at the birth of her son—a very frequent sequel to such a primitive mode of reproduction, as will be well understood—and the fact that she handed her life on to him seems to have had a profound effect on his character. He is reported all through his schooldays to have been an "erratic youth, given to introspection and not without flashes of misleading genius." The phrase "misleading genius" is puzzling, but there is little doubt that it refers to his strange, retrogressive mental outlook frequently shown by a firm adherence to principles long exploded.

It was during his university career that he entered upon a form of enthusiasm which will be understandable to few persons today, and therefore requires some explanation.

JOHN B. HARRIS

MR. HARRIS, whose "Worlds to Barter" provoked such a storm of controversy, gives us now what he calls "realism in interplanetary travel." This is no ordinary interplanetary story; it is a human and gripping adventure of explorations into a new world with a surprising series of developments.

What Mr. Harris shows so powerfully is the effect of environment upon two races: the rise of one and the steady degeneration of another to almost the level of the brute. As our author points out, when men from temperate climates have gone to the tropics one of two things has happened: they have either transformed the tropics and tamed it to civilization or else the tropics have conquered them and they have sunk slowly to the level of nature.

The same struggle must go on when men go to other worlds to live and colonize. Just as the human race on earth became divided into a number of races some of which forged ahead to great civilization, and others remained in a barbaric state, so there will be the division of the race on other worlds.

In 2123, the belief which all the world holds today, that of the Fundamental Order or Prime Origins, was known only to a small group. The rest of humanity grasped only a fragment of this whole and each section of people interwove its particular fragment with a different set of customs and superstitions to produce what it called a "religion." These "religions", it must be understood, had all of them the same basis but differed in form according to the climate and the ancestry of the different races. Thus there would be found in the colder countries a hardy and stern "religion", and in the warmer zones, a more colorful, less practical belief.

Joseph Watson, a Puritan at heart, gathered around himself a similarly-minded group and left his university with the firm determination to start a "Revival."

He began his campaign with the powerful backing of the Anti-Incubation Society. Quite what mental twist led him to ally himself with the very body whose pamphlets were responsible for his mother's death, it is difficult to understand, but there can be no doubt that its views gave him his later war-cry of "What's natural's right."

FROM the very beginning his meetings were a success. An eye-witness of one of the earliest wrote: "The great, gaunt figure of Joseph Watson as he appeared on the platform would have impressed any man. He started to speak with a deceptive quietness of voice and mildness of manner, but as he continued this wore away.

"His mane of fair hair tossed and shook with the empha-

sis of his gestures and his deep, Scottish voice boomed sonorously through the hall. His eyes took on a fire as his enthusiasm rose and it was hard to believe that they did not look out beyond the audience at some mystic vision. I can safely assert that there was not a man nor a woman in all the great gathering who was not at least temporarily held under his sway."

Watson climbed from triumph to triumph. His meetings became occasions for turning out special police to control the crowds. Even the overflow halls were besieged by throngs who struggled to hear him, if only through a loudspeaker. The Anti-Incubation Society began to develop an active following in Scotland numerically surpassing its wildest dream. Money poured into its war chests until it became a power to be reckoned with. Nor was it alone in reaping the golden harvest which Watson's voice fostered.

"What's natural's right," Watson would roar and then proceed to trounce the vivisectionists, the vaccinationists, the birth-controllers, the alcohol drinkers, the smokers, the gamblers, before winding up the exhibition with another blow at his old enemies, the incubationists.

At the end of each meeting he would drop his ferocity with a suddenness which took his audience by surprise, and kneel in prayer.

In three years his own supporters were raised to such peaks of enthusiasm that they made Scotland too hot to hold him.

A mob in Glasgow went straight from one of his meetings to the local Incubation Home and wrecked the place from cellar to roof. Not only was the damage to property considerable, but the outrage started a controversy which was debated hotly all over the civilized world. Briefly, the problem raised was: "Is it, or is it not, murder, to destroy a foetus which is developing in its incubating tank?"

A similar attack was made on the Edinburgh Home. The crowd was beaten off with casualties, but a number of police were killed outright.

In Dundee, Watson's too enthusiastic followers attempted to enforce prohibition by the simple expedient of wrecking all licensed premises. Whole streets were wet with spilled drink and a policeman's head seemed as good a place to smash a bottle as any other.

The Government decided to take action and warrants were issued for the arrest of Joseph Watson as the instigator of unrest in most of the towns and cities of Scotland. But the warrants were never executed for Watson chose to disappear. The Government was saved a great deal of trouble by his action.

HE is next heard of in America, some seven years later. The date of his arrival and the manner in which he filled the intervening time must remain forever a mystery. Furthermore, he was no longer Joseph Watson, but had become Noah Watson, though whether by his own design, or by gradually acclimating to a nickname, is doubtful. It remains, however, quite certain that Joseph and Noah were one and the same: no one who had once seen him could mistake the man.

He was still reforming and still trouncing those sections of the community who attempted to improve on nature, but now he was even more general in his accusations of wickedness and more fiery in his breathings of warnings about the "wrath to come." Somewhere during the last few years he had picked up a seed of thought which grew in his fertile mind to the conviction that the world was due to end very soon, or if not to end, at least to be punished for its wickedness in some catastrophic and highly unpleasant manner.

It seems odd to us now that a man should be able to believe such a thing—not only believe it himself, but persuade others of its truth. Nevertheless, it must be remembered that in the twenty-second century knowledge of our world was, like many other forms of knowledge, in an extremely rudimentary state. It was even easy for anyone to predict the end of the world and find educated persons to accept the prophecy without the slenderest data.

Watson would never reveal whence he obtained his information of the imminence of a "judgment day" by earthquake. He said merely that it was coming and soon. He called upon everyone to repent, claiming that each was a sinner though he might not know it.

"Noah," said this new Noah, "was sent to warn the world before the Flood. You have read what happened to those who did not heed him. Now I have a warning for you. Do you forget the way in which they mocked Noah? Do you mean to mock my warning too?"

But his second campaign did not repeat the success of his Scottish days. Perhaps it lacked the sentimental appeal. Perhaps his moment was not well-chosen. His meetings, though vast, lacked the worshiping silence of those former gatherings where the audience hung upon each word. Now, some even came to scoff; it was one of these who cut in on him with the question: "Where's your Ark, Noah?"

A number of persons laughed. Watson faltered in his speech and lost the thread of his whole discourse as he was greeted with cries from all parts of the building: "Yes, where's your Ark? Show us your Ark, Noah." Someone at the back started to sing "The Animals went in Two by Two," and for a while, the meeting was in an uproar.

Watson, for one of the few times on record, lost his temper.

"I've got an Ark," he roared. "I've got an Ark and when it saves me you'll be sorry you didn't believe. You won't be inside it—you'll be burning, all of you."

Watson was telling the truth. He had an Ark.

In 2133, at the beginning of his "end of the world" campaign, he had contrived somehow to meet Henry Headington and right from the start he had managed to impress that gentleman. Headington was among the richest men in the world. His aircraft factory in Chicago had netted him such a fortune that his wealth could never be accurately estimated. Or rather it should be said that by the time the computation was complete, the value of the holdings had altered to a degree which rendered the estimate useless. He was hedged around, as were all wealthy men of his time, with secretaries and guards, but Watson had not only approached him but enlisted him as a supporter.

CHAPTER II.

Into the Unknown

HENRY HEADINGTON was not a great deal interested about the future of his soul, about which Watson ap-

peared to worry a great deal, but he was concerned at the possible results to his comfortable existence should the earth indeed blow up. In the course of the many serious consultations which took place between the two, Headington became more and more convinced until his belief in the imminent catastrophe grew firm as Watson's own. But Henry was a man of different mettle. At the end of one sitting, he slowly removed his cigar (of which Watson disapproved) and regarded the other impressively.

"You talk a lot," he said. "You get around telling people to repent. Maybe they will, maybe they won't, either way it's not going to help them a lot when it comes to a flare-up. Of course, talking's your line and I don't blame a man for following his line, but it's not mine. I don't talk things; I do 'em."

That was Headington's way. His experts were all assembled and instructed, and within a few weeks the first fruits of their labor began to appear in the shape of a gigantic shed raising itself in a corner of the Headington Experimental Rocket-Drome. Throughout the Headington concerns there was more than a little speculation as to its purpose. Obviously the hangar was intended for a craft of a size hitherto unattempted. Rumors crept out and flew around, as rumors always will.

It was reported as an intention to build the biggest stratosphere plane in the world. Others gave it as their opinion that old man Headington had gone mad and wanted to get to the moon. The opinion of all outside the knowledgeable few was that the machine would be a colossal failure. Probably such a huge bulk would never lift from the earth, and even if it did the pay-load would be infinitesimal.

But the work went steadily ahead. The designers sweated in their offices, bending over intricate plans and drawing till their backs and eyes ached. They may have been skeptical of their power to fulfill the boss' demands to the letter, but they did not show it. The pay was good, but even more important to men who had spent all their lives complying with government aircraft regulations, was the allowance of a free hand. No longer were they bound by the Governmental restrictions regarding noise, power to bulk ratio, size and position of crew's quarters, multiplicity of safety devices where one efficient instrument would serve, and all the other hundred and one trials of their profession.

The object this time was perfection and no worry about working to cost limits. All Headington's fortune was behind them if they wanted it. And so they feverishly drew line after line with the delirious intoxication of the power to make their dreams come true.

The pattern-makers at the foundries were presented with problems which caused them to swear and scratch their heads, but then they too caught the enthusiasm of the designers and solved each difficulty as it came. The instrument builders were asked to produce such gauges and measures that their heads ached with inventive effort. The metallurgists gleefully produced the formulæ of alloys previously considered too expensive to be of any practical use, and gradually a huge bulk began to grow inside its huger shed.

Headington had developed a simple faith in Watson which raised the latter to a combination position of a minor prophet and a good-luck mascot. He was insistent that the reformer should attend the keel-laying ceremony of the great ship and make frequent visits to observe the progress of the work.

"She's going to be a marvel. Nothing like her has been tried in the history of the world," the millionaire said proudly.

"The *Ark*," murmured Watson. There was a far-away look in his eyes as though he stared back through history at that other Ark waiting on its mountain to save the faithful.

THE *Ark*, when finished, was condemned by every government inspector, without exception. It was not even permitted a trial flight and some went as far as to recommend its destruction lest someone were tempted to create a public danger by taking it up. Headington's money and influence served to dispel the danger of the latter threat being carried into execution, but even his backing failed to accomplish the granting of a license for the craft.

So the *Ark* stood untested in its shed for many months. It was kept fully-provisioned and loaded to its limit with fuel and supplies of all kinds. The owner's faith in Watson never wavered, even many of the mechanics and engineers were converted from their former scoffing, but the *Ark* itself gradually became a laughing-stock for the world. Photographs of its stupendous shed occurred in newspapers everywhere. Misinformed articles on its builder's hopes, fears and intentions were sure of a ready sale. Watson encountered increasing jeers at his meetings once his association with Headington was known, and the two of them figured frequently in popular cartoons. The world, in fact, treated the new *Ark* much in the same way as it had treated the old.

Then Watson's wife, a woman as inflammatory as her husband, publicly announced that she had been granted a vision.

"And in my vision," she cried, "I saw the world spew forth flames. It was split asunder on account of its wickedness and from the great clefts its fiery life surged out, turning the oceans to clouds of steam, rolling over the land in a wave of fire which melted the very mountains in its path. And as I stood in awe of the great punishment visited upon evil-doers, a voice seemed to whisper in my ear. 'November,' it said, 'November the twenty-second.'"

It is impossible in these well-ordered days for us to appreciate the weight carried by such an unsupported assertion. Some were wise enough to take no notice of the woman's raving, but the names of Headington and Watson were so much in the public ear that the report was circulated all over the world to become in many a distant land the subject of apprehensive speculation or the cause of skeptical laughter.

But there was one group which took it seriously, neither arguing nor debating, but accepting it as a fact. Headington forced on what final preparations were necessary with a growing agitation since it was already late September. Watson grew more impassioned and his meetings became wilder until it was rare for them to end without the intervention of the police. There is a description of him in those last days throwing out his arms in gestures of the most violent oratory while his wife knelt before him on the platform, facing the audience and praying it to repentance.

A month before the catastrophe was due, the police for-

bade the holding of any more meetings, and Watson and his wife passed from the public sight.

The night of the twenty-first of November, 2134, was long remembered. All over the world groups of nervous persons remained watching and praying with an irrational sense that death was better met fully clad than in night clothes, even if it be instantaneous destruction.

An observer of the final scenes in the great shed of the *Ark* luckily remained alive to tell of the events he saw there.

"Headington had gathered together all his family, most of his engineers and designers and their families and even many of the workmen in addition to the crew and its relatives. All were aboard and ready save for a small knot of watchers to one side of the colossal flier.

"Once midnight had struck, the whole shed was heavy with an apprehensive silence. The group comprising Headington, Watson, Mrs. Watson and one or two more hung breathlessly over a solid stone table. Their eyes never for a moment left the needle of a seismograph for which it served for a mounting base.

"At the end of an hour the silence was so ominous that one would have given a mint of money for the relief of breaking it, but still nobody spoke. Occasionally the sound of someone moving uneasily inside the vessel's entrance port rustled out into the shed to disturb the tomb-like stillness.

"There was a sudden intake of breath. Had the needle kicked? The group bent still closer. The needle kicked once more, definitely and decisively. The end had come. There was a wild stampede into the shining safety of the *Ark*."

There is little need to tell most people how the *Ark* left. How the passengers were in such terror that they even neglected to open the doors of the shed. How the shed itself was so shattered by the impact that it collapsed killing most of those left within. But there can seldom have been a more gorgeous and awe-inspiring sight than that monstrous rocket as it took off. A curving tail of fire spread golden behind it lighting the countryside with the glare of a man-made comet. Scorching the earth beneath it, it passed in glory: head-on for the stars.

The rocket did far more harm as it went than had been caused by the small subsea earthquake in the Pacific a few minutes before. Many imaginations played with its probable fate, but no evidence came to support them, and gradually, like a million other incidents of history, it slipped into the all but forgotten past.

Some maintained that it had managed to leave the sphere of Earth's attraction and that such a feat, once accomplished, could be performed again, but no one knew how. The chemists, the designers, the engineers had gone with their ship and their knowledge had gone with them.

It was not until Hal Newton made his famous expedition that any knew for certain the fate of the *Ark*.

CHAPTER III

The First Plans

THE story of Hal Newton's exploit properly begins more than a year after he married Davida Jonson or, as she is now known the world over, Vida. The two had left their incubators within a month of one another. They had played together as children and grown up with their brilliant minds racing until in the spring of the year 2920 they had decided to pull together.

Hal passed out of his college the youngest rocket-pilot ever created. The thunder of the rockets was the throb of life to him and he handled his planes as though there existed an understanding between himself and the machinery. Man and craft worked together with the smoothness of perfect accord.

Vida was little less outstanding in her chosen calling of chemist. She slid through her classes collecting the envy and amazement of her professors, for she seemed to learn in months what others painfully acquired in years. Already, at twenty-four, she had interesting discoveries behind her and a future of brilliant promise. It was given to her to leap where others plodded.

The marriage was scarcely popular in their set; there were too many broken hearts at Vida's feet and too many sighs behind Hal's back, but none could doubt that the match would be a success.

For a year the two pursued their occupations as before. Hal hurtling through the sky, his body still no higher than the stratosphere while his imagination, as ever, reached out to the stars. Vida coercing her chemicals and dreaming of a future far different from that which fate held in store.

Then the great Gordon Jonson, Vida's father died, and all his millions came to her.

On July the fifth, 2922, the great Newton venture received the first gentle push which was to launch it into space.

The Newtons and their guests finished an excellent dinner and adjourned for coffee and cigarettes to their comfortable lounge. Hal had shown himself somewhat preoccupied during the meal and now he plunged into talk in the manner of one determined to get the matter off his chest.

"Vida and I have a proposition to lay before you people," he said. "It's not going to be a simple little jaunt so I don't ask any of you to give me your final answers at once—it is the kind of thing which will be the better for thinking over."

He surveyed his guests for a moment. There was Temberly, the biologist, barely thirty, but already going a little bald on the crown, short-sighted and sharply bird-like in his movements. Next to him sat the bulky Bill Crawshaw. Bill's father had been the last of the famous explorers and his son would no doubt have followed in his footsteps had there been a single corner of the world left unexplored.

As things stood, he was forced to the substitute of roaming the earth, looking for trouble, an occupation at which he was said to excel both in finding and settling. Lastly there was Lucy Kramer with the face of a Madonna hiding under its placidity a genius for chemistry nearly equal to that of her co-worker, Vida.

"The proposal is this," Hal continued. "Vida has discovered a truly remarkable explosive which has, we think, solved the problem of opposing the earth's gravity. Ever since I was a kid, it has been my ambition to get out into space. With Vida's discovery and a special ship which I have almost finished designing, I think it can now be done.

. "Now, the suggestion is this: are you willing to come with us?"

There was a moment's pause during which no one spoke: Hal went on:

"Of course it is impossible to tell you what the odds are against our ever returning. There are plenty of known dangers as well as the thousands of unknown, but Vida and I have enough faith in ourselves to risk them and we want to know if you have."

THE biologist looked at his host with an expression of doubt.

"Er—I don't quite see what I could usefully do in space. After all, I don't think it is likely that you will find any forms of life there—though, of course, you might," he amended hastily.

Vida looked at him and smiled encouragingly.

"We don't expect to, but you see we don't intend to stay in space for long. We shall land."

"Where?" demanded Temberly and Crawshaw simultaneously.

"On Venus," Vida said as she cast a glance in her husband's direction.

"I had thought of Mars," Hal admitted, "but Vida's converted me. I think she's right when she says that it would be unwise on a first trip to land on a dead or dying world where there may be insufficient air. It is quite possible that some readjustments may have to be made before the return journey and that would prove awkward."

"There's a chance of good sport there?" inquired Crawshaw.

"My dear Bill, how can I possibly tell you? At a rough guess I should say that you will probably be granted more than you expect. Venus is considered to be in a very primitive condition—it may be in a reptilian age. Trying to hit a brain the size of a walnut in an animal as big as a house ought to be a good test of marksmanship even with a rocket-shell rifle."

Bill beamed.

"I'm your man, Hal."

"Good. But don't hesitate if you want to reconsider it."

"That's all right—I shan't want to."

"What do you think about it, Tem?" Hal asked.

Temberly's eyes wandered uncertainly round the room; he appeared to be seeking inspiration.

"Well—er—" he began.

Vida broke in. After favoring her husband with a glance of irritation, she turned to the girl beside her.

"Lucy?"

"Of course." Lucy spoke in a soft, deep voice which matched the calmness of her face.

Temberly was understood to mumble that he, too, would join the party.

The rest of the evening was spent in arranging responsibilities. Hal, of course, was to be chief pilot and he had his eye on a likely man called Heerdahl for a relief. The air conditioning plant, atmosphere testers, concentrated foods, etc., fell naturally into the province of Vida's and Lucy's interests. Crawshaw was to have charge of munitions and armaments and was with difficulty restrained from there and then delivering a lecture on the science of gunnery. Temberly went off into a brown study of contemplation as he made mental lists of his biological necessities.

"There must be someone whose job it is to keep a full account of the expedition," Vida declared.

Crawshaw who had grown abstracted suddenly brightened.

"I know the very person for that job. Lots of experience and a good all-round general knowledge. Nobody better—if she'll come," he ended doubtfully.

"She?" said Hal. "What's all this, Bill? Who is she?"

"You must have heard of her—Freda Linden."

Vida looked relieved. Bill Crawshaw had a reputation for being a little erratic in his friendships.

"I've met her," she said. "She'll probably come."

"That leaves only three vacancies," Hal observed. "They must be filled by technical men—say two engineers and an electrician."

The party broke up late. Each had been alloted his or her part and accepted with a steadiness which warmed Hal's heart. As he watched the visitors drive off, he was full of an affection for these people who were going to help his dream towards realization.

"You were right, darling. I ought to have known better than to ask Temberly before he knew what Lucy intended. When do you suppose those two idiots are going to do something about it?"

But Vida was not listening. There was a far-away look in her eyes.

"You know, dear, there is one thing we must do before we go off on this adventure."

"Lots of things, darling. What's this particular one?"

"We must pay a visit to the home and see about renting an incubator."

CHAPTER IV

On Venus

SETBACKS and worries crowded thick and fast upon the Newtons during the next few months. Parts arrived below specification and had to be returned. The alloy for the exhaust tubes proved unequal to the strains it would have to bear. *Jonite*, Vida's new explosive had to be rendered more stable. But gradually, as the year wore on, the *Nazia* began to take shape.

Hal conducted the others over the ship and asked for their advice on points of interior fitments. In about one hundred feet of overall length they found several cabins; one main living room with windows of fused quartz; a cooking galley and pantry and a small laboratory which would have to serve for the chemists, the biologist and the photographer as occasion demanded. Vida and Lucy criticized the cooking arrangements and demanded alterations, while Crawshaw stipulated for weapon racks to be fixed to certain walls "just in case."

Apart from such details, very little appeared to have escaped Hal's attention. They marveled at the ingenious disposal of fuel tanks and the compactness of the machinery which was to undertake the stupendous task of shooting them through space. Crawshaw regarded the simple control-board and its attendant array of pressure dials for the different rocket exhausts, almost with misgiving. It looked, he thought, more like a typewriter and

a collection of clocks than the nervous system control upon which they would all depend. But he shrugged his shoulders and moved on; engineering, electrical or otherwise was not in Crawshaw's line. He inspected the ammunition lockers and small-arm store with approval.

When they left the ship, it was to gaze up at the shining hull with a still greater respect for its marvels of compactness and comfort. The ship's name in large letters on the bow caught Crawshaw's eye.

"Why the *Nazia?*" he asked.

"It means 'fiery' and this craft is going to have more fire in her than ever was gathered together before," Hal explained.

At the end of June, 2923, she was declared ready for a trial flight—an unfortunate necessity. So far the work had progressed, if not in secret, at least without publicity, but the *Nazia's* trials brought the Newtons on to the front page. Reporters saw the chance of a scoop in this new, winged ship which thundered through the skies at incredible speed. They saw it pass over as a gleam of silver with roaring red ports and, with hastily gathered information, they rushed to their desks.

"A new day has dawned in the history of aviation—"

"Epoch making discovery by young pilot—"

"Hitherto undreamed of speeds in the lower atmosphere have been attained by—" they scribbled.

Hal refused to give any information to the newspapers. He was, he said, merely carrying out experiments and had no intention yet of publishing any results. Nevertheless, from an obscure source the truth leaked out. Hal Newton was to challenge space. Even the date of his intended departure was coaxed into print so that the world might gape at the adventurers.

"On August the twentieth Hal Newton will set out on his attempt to reach the moon," said one paper with a magnificent disregard for accuracy.

People were no longer so skeptical as they had been, of man's ability to conquer space. They had become, in fact, so used to the idea that they were beginning to grow irritated over the many unsuccessful attempts which had been made. The papers gave lists of Hal's predecessors. There was Jornsen who had fallen into the Pacific. Craig who, like Headington, had never been heard of again. Drivers who had succeeded only to the extent of making his machine forever a satellite of Earth. Simpson who had fallen in Chicago and wrecked a fifth of the city in the resulting explosion: and the rest of the gallant army of would be explorers who had laid down their lives. Thanks to the efforts of the press, coupled with its own morbid desires to stare at doomed persons for the last time, an enormous mass of people surrounded Newton's flying ground on August the twentieth.

The crowd was more than annoyed when told that the *Nazia* had taken off the day before.

HAL had spread orders to his complement to be ready to start on the evening of the nineteenth, and to keep the date secret.

He and Vida were awaiting them aboard the ship. The first to come were the two excellent engineers, Mackay and Freeman. Then Heerdahl, the second pilot, arrived with a clatter in a single-seater sports rocket, a speedy and essentially unsafe machine of his own design. Bill Crawshaw loomed out of the night accompanying little Freda Linden who possessed half her escort's height and twice his assurance. Smith, the electrician, stumbled frantically on to the steps of the *Nazia* apologizing breathlessly for his lateness, only to discover that he had mistaken the time. Lucy Kramer explained that Temberly had suddenly remembered some essential at the last moment, and dashed back for it. He turned up some ten minutes later in a depressed condition, having failed to find this important article.

"And that's the lot," Hal said as he ran his eyes round the group. "All ten of us. There's no point in delaying longer"

He leaned out to wave farewell to the little bunch of pilots and engineers which stood enviously by, then withdrew and watched the door settle into its sealing gaskets.

"Couches everyone—and don't forget your safety straps."

Vida pressed her husband's hand as he passed her on the way to his own slung couch. He gave her an encouraging smile.

"We'll make it, darling."

He gave a final glance round the room to see that nothing swung loose.

"Ready?" he called.

All settled themselves as well as possible to resist the effects of acceleration. He fastened the safety strap around him and laid a hand on the control desk at his side.

"Here we go."

He pressed a group of keys. Again a rocket of Earth's venturers shot out; head-on for the stars.

It is kinder to say little about the actual flight. No doubt means will one day be evolved to make such a journey more of a pleasure and less a test of endurance than it is at present. The human constitution is ill-adapted to withstand the effects of rapid acceleration or deceleration, and lack of gravity, while not so serious in its results produces extremely distressing reactions at first. Not until the *Nazia* was several days out could her occupants be certain that the eating of a meal would prove worth the trouble.

The effect of the start was little more than negligible on the two pilots and engineers. In their years of training and practice they had learned how best to resist and how to recover. Of the rest it may be said that there were torturing moments when they one and all wished that they had been left at home to die comfortably in bed. But, even with its failings, the human machine is the most adaptable form that we know. Not only that, but it has a special facility for unpleasantness of minimizing it in retrospect.

Five days out, each was wondering why he had been so fussed about little discomforts and making mental vows that he never would be again. Vows to be as easily broken as made.

At first there was novelty to occupy the travelers. The great empty blackness of space with its myriad sparks of stars, the sun itself flaming and flaring undiffused, seeming away to one side as they traveled in a great curve to intersect with Venus' orbit. But the unchanging soon grows dull, and soon they left the fused windows to seek occupation.

WITHOUT exception they admit that the first fortnight aboard the *Nazia* was the cruelest test of nerves

they had ever undergone. None felt well and all were insufficiently used to the surroundings to be able to settle down and forget the vast nothingness outside. Their restless minds were forever urging and willing the ship to greater speed in the anxiety to have done with the journey and to know what lay before them. Hal has written in his log of his admiration for the restraint they exercised to keep from breaking into open quarrels.

The worst period must drag to its end. Hal had calculated a month for the duration of the flight. When he was able to announce that the ship was up to time and that the fortnight had seen them past the halfway mark, it seemed as though that invisible milestone out in space had lifted a spell from the whole company. It was almost as if, until that moment, they had not believed in the reality of what they were doing nor in the fact that ahead, Venus indeed waited with tasks to be performed and problems to be solved. With one accord they woke from their dejection, threw off the lethargy and went to work.

Crawshaw overhauled his armory. Temberly looked to his slides and specimen boxes. All began to accept weightlessness, with its attendant inconveniences, as a mere discomfort instead of a cause for permanent grumbling. Hal watched with satisfaction the morale of his ship improve. He had known that they were a good lot at heart for he had chosen them with care, but there were moments in the early part of the journey when he suffered from misgiving—perhaps he himself was not so unaffected by the monotony and cramped quarters as he thought.

Venus, at long last, hung like a great frosted globe close by. It had the appearance of a huge, fleecy ball for none of its surface was visible through the swathing of clouds. Eager eyes watched the planet incessantly for some revealing rift, but Venus was keeping her secrets till the last.

The *Nazia* had been gently decelerating for some days. After the strain caused by the start, Hal considered it wiser to treat his company to an easier stop. Not until they were comparatively close was it necessary to order:

"Couches everyone."

With rockets blasting fiercely from her bow ports the *Nazia* began to nose down. Soon she was roaring through Venusian skies like a fiery dragon seeking a resting place on this alien planet.

The ship landed with only a slight concussion. She slithered for a few yards on her shining belly, lurched a trifle to one side and then settled to rest. The eagerness of the travelers caused them to forget the lingering discomforts of deceleration. There was a hasty unbuckling of safety straps followed by a rush across the sloping floor to the windows. A surprised silence was their first reaction to the strange world.

A soft white light filtered through the thick layer of clouds to reveal a queerly unfamiliar scene. They were resting almost in the center of an oval space which appeared to be a natural clearing. It was dotted here and there only with low shrubs; further back the edge of a forest was visible. The trees were of moderate height and smooth-stemmed until they broke into a flourish of small, broad shoots at the top. The shoots appeared to be more fragile than branches, yet stronger than leaves.

CREEPERS were slung in great loops from each shock-headed tree to its neighbors and below grew a thickness of shrubbery, some ten to twelve feet high. Every one of the plants visible was different from anything they had known. Instead of the familiar soothing green of Earthly landscapes, they faced a vista where all was of the same white-grey color. The trees, with their vague likeness to palms, the lesser bushes and even the bed of thick, twisted stalks which covered the whole clearing, all had that same look of being bleached and rendered lifeless by some all-pervading blight. The first inspection damped all spirits.

"Venusian grass is a pretty poor imitation of the real thing," said Heerdahl peering at the foreground. "Looks like a million fat, white worms frozen stiff."

Vida shuddered slightly.

"It's not very welcoming," she agreed. "I can imagine all sorts of queer things creeping silently in that tangle of forest."

Lucy's deep voice expressed the sensations which lurked in them all.

"It's a ghostly world, full of pale horrors. Nothing moves but a few curls of mist in the distance. You see, the leaves just hang tiredly, there's not a living breath to stir them. Perhaps any moment they will be parted by some grey ghost."

Smith, the electrician, moved uneasily.

"Do you want to give us all the horrors?" he inquired. "It looks bad enough without all the spook stuff."

Temberly who had been goggling wordlessly out of the window, suddenly turned and ran down the room.

"Hi. Where are you off to?" Hal called.

"Outside," the little man replied, choking with excitement.

Hal dashed after him and caught him as his hand was on the opening lever of the main port.

"Steady on, man. You might kill us all. We've not tested the air yet. Vida," he added, "get your sample and tell us if it's safe."

While they waited impatiently for the result of the analysis, Freda, with the help of Crawshaw, set up her large camera and started it clicking at the view.

"Might as well take a still and have done with it—it's a waste of movie film," Crawshaw muttered disgustedly. He glowered out at the silence scene and added dejectedly to Hal: "Where are all these monsters you talked about? I can't see anything more dangerous than a few washed-out cabbages."

Hal smiled.

"I never knew a pair of people in such a hurry as you and Tem. He wants to dash out and pick plants without caring if he dies in the attempt, and your first thought on reaching a strange world is to start a massacre. You wait a bit—it looks as though there ought to be plenty for you to do in there." He waved a hand to indicate the thicker, misty forest in the background.

"Oxygen content a little higher than normal, otherwise much the same as our own atmosphere," came Vida's voice from the little laboratory. "Quite safe, though rather dense. You'd better equalize the pressure in here slowly."

Hal busied himself for a moment with gauges and then turned to address the rest.

"Now we've got to settle who is to go out on the first expedition and who stays with the ship. Temberly must come, of course, forcible restraint is the only alternative in his case. And we'll need Crawshaw with his weapons.

Three people, at least, must stay on the *Nazia*. What about you, Smith?"

Smith nodded and cast a contemptuous glance at as much of Venus as was visible through the window.

"I'm quite willing to keep out of that stuff," he said.

"I'll stay, too," Lucy volunteered. "It's more—more human in here."

"That's two then. What about you, Freeman?"

Freeman glanced questioningly at Mackay.

"I guess we'll both stay if you don't mind," said the latter.

"I might have known it," Hal laughed. "Has anyone ever succeeded in separating you two?"

"Not for long," Mackay said with a grin.

"Right, then that's settled. You four stay and the rest of us make a short exploration tour. Bill, I think some machetes would be useful in that stuff."

CHAPTER V

Exploring

IT was a subdued party of six which tramped away towards the trees. The queer silence and lack of motion in their surroundings seemed to quell even the cheerful Heerdahl as they emerged from the *Nazia*.

Each was lightly-clad as a result of Hal's warning.

"The temperature isn't as high as we feared it might be. The air's so dense that it probably eases it off a bit. But we've got to remember that we're twenty-five million miles or so nearer the sun, so wear only essentials."

Though shirts and shorts weighed little, they were encumbered with other necessarily heavy paraphenalia. All carried pistols in belt holsters and the men, save for Temberly, slung rocket-shell rifles across their backs. The little biologist was already so laden with two large, black specimen boxes that he could not be further impeded with the weight of a rifle. Hal carried several instruments including a short-range radio transmitter for communication with the *Nazia*. Freda was panniered on one side by film box and on the other by camera and firmly refused Crawshaw's offers to relieve her of their weight. Crawshaw, himself, and Heerdahl bore rucksacks containing a small quantity of food, while at their belts, as at Hal's, dangled heavy machetes.

The only sounds to break the stillness were those they made themselves; the rattle of accoutrements and the soggy, squashing noise as the fat tendrils covering the ground were crushed by their progress.

Temberly, after a rapid inspection of the growths underfoot, forged ahead with swinging specimen boxes in the direction of the forest.

"We'll have to keep an eye on him," Vida said loudly.

Hal looked at her in surprise, wondering why she found it necessary to raise her voice.

"Yes. It'll be easy to get lost in that stuff," he found himself shouting in reply.

Vida laughed at the startled expression with which he heard his own voice.

"It's this thick atmosphere. Makes things sound much louder," she said.

"Well, this beats tombs for silence. I haven't heard a sound yet except the row we're making ourselves," Heerdahl observed.

They reached the fringe of the forest, to catch up with Temberly who was staring in a puzzled manner at a curious plant.

"Look at this thing!" he cried excitedly.

"Ghastly looking object," commented Crawshaw unimpressed. "What's up with it? Looks the same beastly color as all the rest, to me."

"Well, it is a flower."

"Humph. Try again," Crawshaw advised.

"It is. It's just got two main petals—those upper and lower things looking like jaws."

They all gazed at the growth. It measured some three feet across and its petals were indeed like jaws, giving an impression that an enormous head was gaping at them.

"You see," said Temberly pointing eagerly inside, "it has stamens with pollen on them."

"Well, why not?" asked Crawshaw in bored tones.

"Even I can see that. It hasn't any color to attract insects and cause pollination," Freda said.

"But suppose the Venus insects hate color—they might, you know?"

"Don't be a fool, Bill. Of course—"

"Incidentally, has anyone seen any insects?" Vida interrupted.

Nobody had.

"It's very queer," Temberly puzzled. "I suppose there are no insects here, but in that case how does the thing manage to get fertilized?"

He peered more closely at the great, pallid flower and leaned over to gaze short-sightedly inside. He put one hand against the lower petal.

With a sudden swish the upper half swept down upon the lower, blowing a cloud of pollen into his face. The rest of the party laughed heartlessly at the sight of the little man choking and spluttering over the flower dust he had swallowed.

"Well, there's your answer, Tem," said Vida. "The plant is very sensitive when it is touched. It blows out the pollen and hopes for the best."

Temberly, recovered, regarded the plant with admiration, as though it had accomplished something very clever.

"Ingenious—most ingenious," he said with the air of one paying a compliment. "A sort of natural bellows."

THEY paused while Freda took her photograph of the great flower, and then decided to work into the forest.

"We must keep close together. No dashing off to one side (particular application to Temberly). Remember, we don't yet know the period of Venus' rotation. There might be serious consequences if it were to grow dark suddenly and we were separated. You had better lead, Bill. You've got a machete in case of heavy going? Good. Now Temberly second, and for heaven's sake don't hold up the procession too much, you're going to have weeks to examine all this stuff. Everybody ready? Let's go."

They forged ahead with but little conversation. Occasionally there was a pause while Crawshaw cleared a way through the soft growths and Freda seized another opportunity for a camera shot. Otherwise they plodded steadily. After two hours the conviction was rapidly growing in the mind of everyone, save Temberly, that Venus was a remarkably dull place.

"Just a damned great forest of celery," observed Heerdahl. "I say, Tem," he shouted up the line, "why is all this stuff so corpse-like?"

"I don't know—been wondering about it. Obviously these plants have no chlorophyll; they must use something else instead. It may be that they don't break down carbon dioxide the same way, or perhaps they don't use it at all. I can't tell you anything about them until I've had a chance to do a few experiments."

The party continued its advance in silence. There was a sudden shout and an explosion ahead.

"What is it?"

"Missed it," said Bill's voice disgustedly. "Little thing a bit bigger than a rabbit—same color as everything else in this rotten world."

"A mammal?" inquired Temberly excitedly.

"How the devil should I know—I only caught a glimpse of it running. Anyhow, it shows that there is something besides plants in the miserable place."

He called back down the line a few minutes later.

"I say, it seems to be getting clearer out there on the right. What about making that way?"

"You're leading."

They came out at the head of a shallow dip of land leading down to the shore of a large stretch of water. Whether sea or lake, it was difficult to tell. The limit of visibility being always low on Venus, the water appeared to stretch away until it indefinably mixed with the ever-hanging mist. Hal tasted the water and was just opening his mouth to pronounce it fresh, when away on the left came the sound of a long, rumbling bellow, followed by that of a colossal splash.

Quick as a flash, Crawshaw had unslung his rifle and torn off over the adjoining rise in the direction of the noise, leaving the rest unrecovered from their alarm of the unearthly roar.

"Damn the man," said Hal. "I'll go and fetch him back. You look after the others, Heerdahl."

"What do you think that can have been?" Vida asked, watching her husband disappear in the wake of Crawshaw.

"God only knows," Heerdahl said. "There's no reasoning to go on in this place—might have been anything from one of those obsolete reptiles he talked about, to a factory hooter. Beastly mournful whatever it was."

"Don't you think we ought to go too?"

"No, we might easily miss them. Besides, orders are orders. I think we might have a cigarette and pollute the air of Venus for the first time with tobacco smoke."

The two sat down and leaned back against a rock. Heerdahl put his rifle across his knees, lit Vida's cigarette and then his own. He inhaled deeply and with satisfaction.

"That's good."

Temberly had wandered down to the water's edge and was busily filling little vials and packing them in his specimen case for future examination. He then bent down to examine some subwater growths with a deep attention which rendered it possible to consider him safe for the moment. Freda was indefatigably brandishing her camera at a variety of likely and unlikely objects.

"You know," Heerdahl reflected, "this might be quite a pleasant world if only it didn't look so drearily monotonous. I don't think I ever realized before what a difference color can make."

VIDA nodded.

"It's rather like living in a photograph—nothing but whites and greys and darker greys. With this diffused light there aren't even any clear-cut shadows."

"Not much use for sundials in this place—I wonder if the sun does ever truly shine? By the way, how long is it since we left the *Nazia?*"

"About three hours."

"Then I should think we'll have a fair spell of daylight yet. We'd only just left the shadow when we landed, so it was not very long after dawn. Hullo, what's Tem up to?"

Temberly was knee-deep in the water looking agitatedly down and pouncing from time to time, apparently without making any catch.

"What is it?" Heerdahl called.

"Fish—come and look at them."

"Oh, hang fish. I prefer to be comfortable."

He and Vida continued a desultory conversation during the following half hour. No further bellow broke the silence, though once or twice big ripples on the surface of the water gave an indication of unknown creatures stirring in the depths.

"I hope they're both all right," Vida said nervously.

"Oh, they know how to look after themselves, besides we'd have heard shots if there had been any trouble."

Even as Heerdahl finished speaking, a hail reached them as they saw two figures striding over the skyline.

"Nothing," said Crawshaw with deep disgust, in answer to their inquiries. "We poked around a bit and found footprints the size of dining tables leading down to the water, but we never got a smell of the creature itself."

"No need to be so gloomy. You could scarcely have carried the thing home if you had shot it," Heerdahl pointed out.

Temberly left his dabbling and walked up to the party.

"Most interesting," he announced. "A three-eyed fish. One eye set in the top of its head. Of course there were such things on Earth, but I never hoped to see more than a vestigial third eye, at best. This is a very interesting place, you know."

"Glad you think so," grunted Crawshaw. He turned to Heerdahl.

"Where's Freda got to?"

They all looked around. There was no sign of Freda.

Crawshaw turned glaring upon Heerdahl.

"You were left in charge here—why did you let her go? It was your business to look after her."

Heerdahl colored angrily.

"Protection was my job and I'd have done it if it had been necessary. I wasn't told to be a nursemaid. I couldn't keep the girl here by force."

"You ought to have forbidden her to go out of sight."

"A lot of notice she'd have taken of orders from me—or from anyone else."

"Shut up, you two," said Hal. "You won't get anywhere by reviling one another. Bill, you've got a voice like a foghorn. Let it go."

Bill obeyed with a stentorian bellow which, in the thick air, sounded very little inferior to a foghorn. They listened tensely for a reply and Vida thought she heard

a faint answering hail on the right. Heerdahl agreed.

"Anyhow, she must have gone in that direction. If she went back into the forest the way we came, Vida and I would have seen her, and if she'd gone along the shore to the left you two would have met her."

Hal nodded.

"We'd better get along. We can leave signs marking our way so that she can follow on if we miss her. Now, for God's sake, everybody keep together this time."

Their way along the waterside was easy. The main forest did not begin within some hundred yards of the brink and left a walking surface covered only with the usual matted tendrils. Visibility, however, was rendered poorer than ever by the constant undulations of the land. Hal Newton has recorded that for the atmosphere to be so dry and clear as to allow sight of even a large object more than a mile away, is a rare occurrence indeed on Venus.

At intervals Crawshaw emitted another powerful shout and the party paused to listen vainly.

"Heaven knows what she wanted to come along here for," he grumbled, "it's all just the same as the place we stopped at."

"FREDA!" he bawled again.

This time there came an unmistakable answering shout from somewhere ahead. The whole party took to its heels.

"Just over the next rise, I should think," Hal said jerkily as they pelted down the side of a shallow gully.

They reached the next vantage point and paused, breathing heavily, to look about.

Some three or four hundred yards ahead they could make out the figure of Freda. Her head was bent over her inevitable camera, while around her clustered a group of some eight or nine pigmy creatures.

"Put that up you fool," snapped Crawshaw to Heerdahl. "You can't use a rocket-shell rifle at this range—you'd blow the whole lot of them to bits. Besides we'd have heard her pistol if they had attacked her."

"The best thing we can do is to get in close quietly, we don't want to scare the things and spoil her chances of a good photograph," advised Hal.

"I say, did you see that," Vida asked.

"What?"

"I did—she spoke to them," Heerdahl said.

"Don't be a fool," Crawshaw began. "How the blazes—?"

"Hands up," called a high-pitched voice behind them.

CHAPTER VI

Dingtons and Wots

THE five swung round.

"What the—?"

"Hands *up*," demanded the voice.

At the sight of six leveled barrels they obeyed swiftly. Then followed a silence as the explorers gazed amazedly at their captors. The holders of the insistent weapons returned the stares unblinkingly.

They bore more resemblance, perhaps, to monkeys than to any other earthly form of animal, yet the likeness was remote. For one thing, they stood upright with the straightness of man though their legs were very short in proportion to the rest of the body. For another, the close, silvery grey hair which covered them, grew even on their faces. The average height must have been somewhere between four feet four inches and four feet six, and their heads showed evidence of no mean mental development.

The faces of the creatures were given an oddly half-human look by reason of their high-bridged noses. And the hands, with thumbs set in opposition, differed from the human hand only in possessing a curved claw at the end of each finger.

Six of these claws were hooked menacingly round the triggers of six weapons.

Crawshaw broke the silence, and with it, the spell of indecision which seemed to hold both parties.

"Did—did they speak in English?" he asked incredulously.

Hal wore a puzzled frown.

"It certainly seemed that way," he admitted, "but—hang it, it must be a form of mental suggestion. We only thought we heard the actual words when they transmitted the thought. They couldn't—"

As though to contradict Hal's theory, one of the creatures spoke and they could see its lips form the words.

"Take their guns," it said.

A companion laid his rifle carefully on the ground and approached. Crawshaw lowered one hand threateningly.

"Stop it, Bill. Do you want to get us all killed? We better submit gracefully for the moment—they've got the drop on us now."

The creature relieved them of all their pistols and rocket-shell rifles, looked doubtfully for a moment at Hal's radio transmitter and, intent on taking no chances, removed that as well with the air of one who is going to be on the safe side. He handed the haul to his companions who regarded them curiously before slinging them to their own trappings.

"Look out," Heerdahl called involuntarily as the leader fingered a rocket-rifle trigger in a meditative fashion.

The creature looked up at him solemnly for a moment, then nodded and resumed his examination of the mechanism. He appeared puzzled by the rocket-shell cartridges, though he accorded the bullet cartridges of the pistols a barely interested glance; evidently the former were new to him. At length he too slung the rifle on his back and advanced to peer closely into the faces of the captives. Again he seemed puzzled, but whatever his problem was he decided it could wait until later and turned to give an order to his followers. The whole party moved off from the rise towards the spot where Freda was still to be seen plying her camera.

"Well, I'll say that girl's got the reporter's mind right enough—that's the spirit which made the front page what it is today," Heerdahl said admiringly.

AS they approached, Freda broke off an animated conversation to greet them.

"Hullo," she said. "I hoped you'd be along soon."

"Well of all the—" Crawshaw began.

"Very kind of you," Hal remarked coldly. "May I ask what the devil you think we're going to do now?"

Freda shook her head.

"The question more properly is—what is going to be done with us? And there seems to be rather a difference

of opinion about that. It all depends apparently whether we are Dingtons or Wots."

"Whether we're what or what?"

"No. Whether we're Dingtons or Wots."

"Or—?"

"Don't you understand? They want to know whether you are a Dington, or whether you are a Wot."

"Oh, I see. Well, what are they, anyway?"

"That's just what I'm trying to find out."

Freda turned back to her group of the creatures and resumed conversation. Hal rumpled his hair and scratched his head thoughtfully. As far as could be judged, the grey animals intended no harm. They seemed a placid and unexcitable breed, but on the other hand they carried weapons, and their first act had been to disarm himself and his party. At the moment there seemed to be no desire to make a move of any kind, all attention was concentrated on Freda and her conversation. Her conversation, that was the wildest improbability since they had landed.

"Hang it all," Hal murmured, "it's a bit steep. We come across twenty-five million miles of space—more than that—and what happens? The first inhabitants we meet on a strange planet address us in English. Damn it all, something's wrong somewhere."

He turned to the leader of the guards in an attempt to clear up the anomaly and listened closely as the creature tried to reply to his question. Despite the unusual pitch and hardness of tone in the voice, he was able to detect the presence of an unfamiliar accent and of other slight differences. His inquiry was misunderstood. Apparently the word "English" conveyed no meaning to the other though he spoke the language itself. Hal reshuffled his thoughts and tried another start. He indicated the members of his party.

"We are men—what are you?"

"Gorlaks," replied the creature promptly and then added: "Are you Dingtons or Wots?"

"Oh, damn," said Hal.

Temberly from the first had been observing the Gorlaks with the closest attention.

"Look," he said, pointing to the furry grey figure to which Freda was talking. They followed the line of his finger.

From a kind of pocket in the creature's front protruded the doll-like head of a miniature Gorlak whose bright little eyes were following their movements with solemn interest.

"Oh, isn't it sweet?" said Vida advancing to the mother and her furry baby.

"Marsupials," Temberly remarked half to himself.

The Gorlak leader's sharp ears overheard him. He shook his head.

"Monotremes," he corrected proudly.

Temberly looked surprised and nodded thoughtfully.

"I know what a marsupial is, but I'm hanged if I've ever knowingly met a monotreme before. What is it?" Heerdahl asked.

"A step beyond reptiles. That is, it has warm blood and grows hair, but it still lays eggs and carries them in a pouch to hatch them out."

"That sounds a pretty efficient sort of system."

"So one would think, but for some reason or other monotremes never made great headway on Earth. We went on to the mammal stage and there are very few of this intermediate stage left. They seem to have taken well here and developed a high intelligence."

He turned back to the Gorlak.

"Are there many kinds of monotremes?"

"Five."

"And mammals, have you any of them?"

"Only Dingtons and Wots."

"Oh, hang it all, can't somebody clear up this business?" groaned Heerdahl.

"Now, listen to me—" he began but he got no further.

A plaintive sound on a high, carrying note came floating from the direction of the forest. Every Gorlak became suddenly alert.

"DINGTON," said the Gorlak leader. He produced a curiously shaped whistle and blew on it to cause the same mournful note. In a few seconds came an answer, whereat the Gorlak blew again.

"Well, we look like finding out what a Dington is at last," said Hal as they watched the forest expectantly.

Again the note sounded. It was evident that the creature, whatever it was, was approaching, for the sound was much louder. The Gorlaks burst for a moment into high-pitched conversation which was impossible to follow.

"Good heavens, it's a bird—Look there, just over the trees!" cried Crawshaw.

Something with slowly flapping wings of tremendous span was looming out of the mist.

"It's pretty low—only just clearing— Good Lord, that's no bird, it's a machine," Hal gasped. "An ornithopter, sure as I'm alive."

They all stared at the leisurely-approaching craft.

"It's sinking too fast. It'll hit those trees as sure as—there, that bent it some."

The plane had just failed to clear the last outpost of the forest. Its wing tips, at the bottom of their stroke, fouled the bushy heads of the white trees and the whole contraption was knocked into a forward somersault. For a moment it threshed furiously before coming to rest inverted and asprawl, among the lower bushes. Shrill cries of alarm arose from the Gorlaks; with one accord they rushed off in the direction of the capsized flier, leaving their prisoners to shift for themselves.

"Well, we'd better go, too, seeing that they've got all the weapons," said Hal.

With the advantage of their longer legs they easily overtook the Gorlaks, and arrived well in the van at the wreckage. Somewhere in the jumble of broken wings and tangled bushes something was struggling. It evidently heard their approach.

"Hullo. Help me out of this damned thing, will you?" called an unmistakably human voice.

The aviator, when extracted, proved to be a tall, well-built man. A mop of fair hair surmounted a face which would have seemed remarkably pallid on Earth, but all were now growing so used to the grey-whites of Venus that they were able to make allowances for it. There was a twinkle of amusement in his eyes as he looked from one to another of their astounded faces and his mouth twisted with a smile as he spoke.

"You've been a long time," he said, "but you are very welcome."

There seemed no possible reply to this remark, and

they remained silently surprised. The man seemed more amused than before. He turned to the leader of the Gorlaks.

"*Arrul.* Get us some food."

Several of the Gorlaks scurried around and began to pull up neighboring plants. As they laid the bulbous roots before the party, the flying man picked one up and offered it to Vida, indicating that the rest should help themselves.

"You will find these quite good, though perhaps not very tasty," he suggested. "Explanations are so much easier when one is reinforced with a meal, and I haven't had anything to eat since before dawn."

The rest picked up the vegetables. The flavor was weak, but they were not unpleasant, and a good cure for growing hunger.

CHAPTER VII

Attack!

THE guard of four aboard the *Nazia* was finding time hanging heavy on its hands. They had all watched the rest of the crew disappear into the forest, with mixed feelings. In Lucy a definite sense of misgiving arose. She had been startled to see Temberly's misadventure with the strange Venusian flower and, though it had luckily turned out to be nothing more than a cause for laughter at his expense, it seemed to her to hint of mysterious dangers.

It was with uncomfortable apprehension, therefore, that she saw the forest swallow them up. Whether this had its root cause in a fear for them, and Temberly with them, or in a feeling that the four in the *Nazia* were now marooned in this strange place, she could not tell. She turned to Smith, at her side.

"It would have been better if they had left Heerdahl with us. Suppose they are gone a long time or get into some kind of difficulties, we can't take the ship to look for them."

Smith nodded agreement. He, too, was feeling depressed.

"Yes, we ought to have had a spare pilot—though Mackay might be able to move the ship if it should come to a pinch."

For the next two hours or so they occupied themselves about the *Nazia* in cleaning up the cabins and making ship-shape after the inevitable disorders of the run. Lucy, with her characteristic appearance of having allowed her thoughts to wander far away from her surroundings, was straightening out the chaotic condition of the pantry when Smith's voice recalled her to the window.

"I say," he shouted excitedly, "come and look here."

Mackay and Freeman also crowded close to the fused panes.

"What is it?"

For answer, Smith pointed silently at the edge of the forest. The spot he indicated was further away than that at which the others had disappeared and, consequently less distinct. Through the misty air they could dimly make out a white figure moving slowly towards them—without doubt a biped.

They offered no comment as they watched it approach. At last it came to a range at which it was clearly visible as a man. He paused for a while in interested contemplation of the ship. It was obvious that he had not yet seen the watchers in the windows and they were granted a good chance of observing him.

He stood a little less than six feet, as nearly as could be judged. His head was covered with thick, black hair which fell in a tangled mass about his shoulders. A beard, no less unkempt, straggled down across his chest. The only attempt at clothing was a short kilt of woven, whitish cloth and a broad belt to secure it. To the belt were attached a number of small pouches and a few hooks from which implements dangled. In the crook of one arm rested unmistakably a rifle.

The four looked at one another in surprise. Of the many things they had been prepared to meet, man had been one of the least expected.

The figure moved out of their field of vision, still regarding the ship intently.

"Gone around to starboard," announced Mackay.

"Is the entrance port closed?" Smith inquired nervously.

Freeman set off to meet the visitor, or to close the port should it seem necessary, while the rest moved over to the starboard windows for a view of the encounter. The result was disappointing. The prowler's jaw dropped for a second, then he turned and scuttled for cover like a rabbit.

"Queer," remarked Lucy. "Did you notice that he was white all over, like everything else here?"

FREEMAN returned.

"Guess he didn't like my face. Wasn't long in making up his mind, either. What happened to him?"

"Went back round the bow and streaked for the forest," Mackay replied.

"I suppose you've closed the port?" asked Smith.

Freeman looked at him.

"Sure, I closed it. Though it hardly seems necessary when the natives are as frightened as mice. What are you scared about, anyway?"

Smith shifted uncomfortably.

"I—I don't know. I reckon the whole damned place looks pretty nasty to me. I wouldn't care so much if something would happen; it's all this hanging fire feeling that I don't like."

He looked ashamed of himself, but brightened as Lucy backed him up.

"I know just how you feel. This place affects me the same way," she said.

The two engineers returned to their interrupted work and Lucy to her pantry while Smith kept watch at the window for a possible reappearance of the native. It was almost an hour later when he called to the other again.

"He's come back. Seems to be beckoning or something of the sort."

"Yes, he's beckoning," Mackay agreed. "I wonder why this sudden change of front—he wasn't too keen on us before?"

"After all, one would expect a savage to be scared at first," Lucy pointed out.

"Not too much of the savage about him. That looked like a fairly useful gun to me."

Mackay turned an inquiring look on Freeman.

"Well, what about it?"

"Sure, I'm game," Freeman agreed. "We'll just take

pistols—you two cover us with rocket-rifles," he instructed Lucy and Smith.

The two men set out side by side across the squashing growths, towards the beckoner. They signed to him to advance and meet them, but he appeared to prefer his own choice of ground. Half the distance from the ship had been covered when the man slid back into the foliage.

"What the—?" Mackay began, but his question was answered before it was expressed.

The sharp crack of an explosion reached them. Simultaneously Freeman dropped.

Mackay hit the ground a split-second later. The rapidity of his taking cover tokened an adventurous life.

"Blast him," he muttered, but his words were drowned as the two on the *Nazia* sent replies crashing into the forest. The two rocket-shells exploded in the same flash among the trees.

"And that's settled him," thought Mackay, but he was canny. He unbuckled the holster of his pistol and raised it above cover. A shot drilled it promptly. Again there came the crash of rocket-shells as the ship answered.

Mackay crawled over to Freeman and inspected the wound with some relief. The bullet had just flicked him lightly, enough to stun and to draw a trickle of blood, but the most serious result would probably be a bad headache for a while. He grasped the other by one leg and started to crawl back, towing him towards the ship. Bullets still whistled over his head from the forest, and crashes behind him told that Lucy and Smith were returning the fire with interest. Gradually the attackers slackened and ceased, but Mackay was taking no risks. He crawled until he was near the spot where he must rise to climb aboard the *Nazia*.

"Give them hell while I make a bolt for it," he called up to the pair.

Under cover of a furious burst of rocket-shells, he stood up with Freeman across his shoulders, tipped the other into the entrance port and climbed in himself. The door closed with a thud as Smith pulled over the control.

Lucy put up her rifle and went in search of water and bandages while Mackay, over the insensible form of his friend, made unprintable remarks about the Venusian natives and their ancestors.

"Well, thank God the ——fools hadn't got the sense to wait until we were closer," he ended.

Under Lucy's ministrations, Freeman soon came to. He lifted one hand to his head, simultaneously producing a flood of language which rivaled Mackay's outburst, then:

"Did you get him?" he asked.

"Him?" said Smith. "There must have been dozens of the devils. We blew the part where the one man vanished into little bits and then churned up the stuff for a good few yards on either side. But they're at it again. Listen."

THROUGH the thick armor of the *Nazia* an intermittent tapping was audible.

"Bullets."

Mackay smiled slightly.

"Let 'em waste the stuff. A peashooter would be as useful to them—and just as effective against this bus. Let 'em try rocket-shells if they like."

Smith crossed to one of the windows and called back:

"They're advancing. A whole big ring of them closing in. Several hundred of them, I'd guess."

"I suppose they think that they're safe now that we've shut the entrance," Mackay growled. "The aggravating thing is that they're damn well right—our windows aren't made to open, and we can't do a thing but sit here like sardines in a can."

Freeman, almost recovered by now, looked up with a grin.

"We can give them a nasty jolt when they come closer."

He stood up and swayed a little uncertainly before staggering off forward in the direction of the controls.

"What's his little game?" Smith asked.

Mackay gave a broad smile.

"Come and see," he replied, motioning them to the window.

At their appearance a spatter of lead rained against the fused glass. Lucy started back in alarm.

"It's all right," Mackay advised. "This stuff beats six-inch steel."

The crowd was now clustered closely round the ship. They could see the pale men's mouths opening and shutting and knew that they were shouting as they brandished their weapons. Some were even battering on the hull with rifle butts, though not a sound was audible inside, save the occasional flick of a bullet.

"Watch," said Mackay.

The ship trembled slightly as there came a growling rumble. From fore and aft sprang sudden belches of flame, while a line of fire ran spurting swiftly down each side. The enemy broke and ran to a respectful distance.

"He turned the rockets on them. First the main driving and braking bunches, then a flip on the side steering tubes," explained Mackay. "I guess he was feeling sore about that bullet he turned."

"And now?" asked Lucy.

Mackay shrugged his shoulders.

"Checkmate. We just wait for something to happen."

The enemy's reaction to the situation was similar. A number detached themselves to fetch food from the forest and then all settled down comfortably—though well out of range of the rocket tube flames.

Freeman came back looking worried.

"We don't want the others to run into this gang when they come back. Can't you get them a warning on the radio, Smith?"

"I've tried. Couldn't raise a chirp from them. I guess Hal's set must have packed up or something."

A few minutes later, an unusual glitter caught Lucy's eye. She pointed:

"Look. There's something flashing among the trees."

CHAPTER VIII

Explanation

THE fair-haired young man looked around the group. "Permit me," he said, "to introduce myself—Knight Dington."

Hal briefly introduced his party and himself.

"Now would you be so kind as to explain a few of these anomalies?" he suggested.

"Such as—?"

"Well, how you come to be speaking English, for in-

stance, and the nature of all this Dington and Wot business."

"Then you didn't know?"

"Didn't know what?"

"Why, that we were here."

"Look here, suppose we start this thing at the beginning," Crawshaw interrupted. "Now, how is it that you and these—er—Gorlaks, speak English?"

"Because, apart from the Gorlaks' own peculiar language, it is the only one known on Venus," Knight replied with a mischievous twinkle. "But I'll try to explain. I suppose you have heard of Noah Watson's *Ark?*"

"You mean to say that the *Ark* really—?"

"Yes. In spite of the jeers it caused, it achieved its purpose. It left the Earth and landed on Venus."

"Then you are—?"

"I'll try to make it short. In the *Ark*, as you probably know, there were roughly one hundred and twenty persons—it was a large machine. Now, Noah Watson and Henry Headington were two men whose principles were vitally opposed. They agreed, in fact, about only one thing, and that was the imminent destruction of the Earth—a matter in which they were both entirely wrong.

"Headington soon found out that he had been misguided, but Watson to the end would never admit that he had been wrong. Headington looked back from space at the world from which he had exiled himself, and cursed because there was no turning back. From that moment he began to hate Watson. And Watson, still convinced that the Earth was now barren, unveiled the dislike he had hitherto concealed for Headington's way of life.

"By the time they reached Venus, it was quite clear that they would never cooperate to build up a new civilization. They separated the moment they could leave the ship and never saw one another again.

"The *Ark* made a very rough landing. Only some seventy-two of the passengers survived it. Of these, thirty followed Headington, while the other forty attached themselves to Watson. The two parties, with enmity in their hearts, set off in opposite directions and founded communities according to their different lights.

"All this, as you know, took place nearly 800 Earth years ago—about 1298 Venusian years—plenty of time to build nations where food grows readily to hand.

"Our records tell us that in the course of time various modifications have occurred. Our skins have lost their pigmentation and our chests are a little smaller since lung capacity does not need to be as great. Our muscular strength, on the other hand, has remained at an approximately constant average since the pull of gravity is only a trifle less.

"The language has undergone merely a few, very slight changes in colloquialisms and metaphors, mostly derived from the names we were forced to coin to describe phenomena peculiar to Venus. Otherwise we believe we have changed very little."

"Then your nations are—?" Hal began.

"They are named after their leaders. Headington gradually became contracted to Dington in popular speech, just as Watson became Wot. I, myself, claim direct descent from the original Henry Headington, but the surname, too, has become Dington.

"The things which most puzzled Arrul and the other Gorlaks, when they found you, was really your complexions. Although the fact that you are fully-clad pointed to your being Dingtons, yet you were not normal Dingtons, but neither did you look like Wots. They can never have really thought you were Wots, or you would not be alive now."

KNIGHT looked at their faces again and smiled.

"You will excuse me," he said, "but no wonder the poor Gorlaks were worried. You see, except when fashion decrees it to some of our women, colored faces are unknown here."

Vida looked curiously at the young man.

"You didn't seem very surprised at seeing us," she remarked.

"I was searching for you."

"But how did you know—?"

"An Earth ship was bound to come sooner or later. Once the secret of space travel had been solved, it was certain to be rediscovered. The thing which most surprises us is that you have been so long in coming. From the first, old Henry Headington used to gaze up at the clouds which hid the stars and the Earth he loved so well, saying that soon you would come and rescue him. But the months drew into years and the years into centuries, and so, for eight hundred years we have watched and waited, though no longer from any desire to be rescued."

Vida felt a surge of pity for the poor old man, far back in the past, watching the rolling clouds for the help which never came. Knight's voice was continuing:

"Last night we heard the roar of rockets and saw the red glow in the sky. There was an uproar and shouting; all the cities went wild. Everyone knew that the old man's faith was upheld at last. But you passed over us, heading into the Wot country. As soon as it became light—it was almost dawn when you passed—we sent out a fleet of scouts to find you."

They had risen to their feet during the last few sentences, and were preparing to depart.

"Can we go straight to your ship?" Knight inquired eagerly.

Hal nodded and produced from his pocket a small instrument in which a needle swung. The Dington looked at it curiously.

"I've heard of that. A compass, isn't it? I'm afraid it's no good here."

"No," said Hal, "I tried a compass before we set out and found that it just idled. This little thing is specially built so that it is always attracted to the ship."

He steadied it for a moment. Then they turned their backs on the lake and plunged into the forest in the direction indicated by the needle. Knight hung back a moment and applied a light to the crumpled remains of his ornithopter. As the machine went up in a sheet of flame he came running after the rest.

"Doesn't do to let Wots get hold of them," he explained.

LESS than two miles had been covered when distant crashes became audible ahead.

"Rocket shells," said Crawshaw. "Rifle size, I'd judge."

"What are they?" asked Knight.

Hal briefly explained the principle of the self-propelling, explosive bullet.

"Never heard of them," Knight assured him.

"Then it must be our folks. Let's get a move on."

A while later there came a short, thunderous blast from the *Nazia's* driving rockets.

"What on earth—? Anyway, they can't have moved her," Hal added, after waiting in vain for a repetition of the sound. Half an hour later they came suddenly to the edge of the clearing. An exclamation broke from Knight, and he motioned the party back with one hand.

"Look there," he said.

They gazed in consternation at the shaggy headed, half-nude crowd surrounding the *Nazia*.

"Wots," said Knight in answer to their unspoken question. "This is going to be difficult."

"There must be hundreds of them. We can't attack that lot. How are they armed?"

"Rifles—they always carry them. Although their motto is 'What's natural's right', they unfortunately make an exception in the matter of rifles—they're pretty fine shots, too. Though, even unarmed, they'd tear you to bits."

"But we don't want to hurt them," Vida objected.

"Doubtless, but you don't understand these people; they are fanatics—dangerous fanatics. If they got hold of you—"

Bill Crawshaw interrupted rudely. His trigger finger was itching.

"This isn't any time for lectures. What are we going to do?"

"You better tell your people to sit tight where they are if you've got any means of getting a message through," Knight suggested.

Hal took his radio transmitter from the Gorlak who still carried it. Everyone watched as he tried for connection.

"No good. Can't raise them although there's a wire out."

He thought for a moment.

"I suppose nobody's got a lamp?"

"I have," said Heerdahl unexpectedly.

"Good man, that's lucky. A heliograph's no good in this diffused light. Smith knows Morse, he used to be on telegraphs." He slipped the torch into a pocket and turned to one of the white trees.

"Don't go higher than about ten feet. These don't stand much weight," Knight advised.

For a few moments there was no reply, then an answering flash appeared in the *Nazia's* window.

"All safe?" Hal flashed.

"All O. K."

"Those men outside are really dangerous."

"We've had some."

"Then keep where you are. Don't open port until we have driven them off. Going for help now."

"O. K."

Either the exchange of messages had been unobserved by the Wots, or else, as seemed more likely, they had not realized that the ship's flashes were anything more than accidental. Hal descended and handed the lamp back to Heerdahl.

"What now?" he asked Knight.

"We've got to rouse Chicago and get them on the job."

"I beg your pardon?"

Knight grinned.

"I suppose it does sound a bit strange to you. You see, old man Headington came from a place of that name, on Earth, so he chose to call our main city after it for old time's sake—he thought it sounded homely."

"Lead on. Now that I know the others are safe, I'm all for seeing your idea of Chicago."

CHAPTER IX

Ambush

TEMBERLY plucked at Hal's arm, his face was white with anxiety and his eyes pleaded for reassurance as he asked:

"You're sure they'll be all right, Hal? I mean, Lucy's in there and if anything should happen to her—" He left the sentence uncompleted.

"They'll be all right, old man. They're as safe there as any place in the universe. I'll bet a twelve-inch rocket shell would only dent the *Nazia*."

"Yes, of course," said Temberly. "I thought so, it's only—well, you know."

"I know."

A hoarse, sawing kind of whisper came from Crawshaw.

"Freda, for God's sake, come back. We're going now."

Freda, who had wriggled forward to the very edge of the clearing, stopped her camera, sighed and came squirming back to them.

"Lucky I brought a telephoto lens—it's a pretty long shot, and about the worst possible kind of light. Still, I think I've got it here," she said calmly, patting her camera.

"You'll drive me grey," said Crawshaw. "You little devil, how many times have I told you—?"

"Now, Bill dear, don't be a bear. You know perfectly well that I will not be ordered—"

"Come on," said Knight. "The sooner we get away, the better. It's not healthy here. Arrul is leaving five of his Gorlaks to watch. He and the rest are coming with us. He's given orders that one of them is to overtake us and report if anything seems to be moving here."

The procession took up its march while the Gorlaks who were to remain slid among the bushes. They seemed to disappear almost uncannily, so like was their color to that of their surroundings.

Knight led them in silence through the monotonous forest with a sureness and lack of hesitation which puzzled Hal. At last he inquired how it was done. Knight looked surprised.

"That's odd. I never thought of it. I just know which is the general direction of Chicago—that's all."

"But how?"

"Sort of instinct. You use a compass on Earth, but as it doesn't work here, I suppose we've subconsciously developed a high sense of direction. But even if I were wrong, Arrul would tell us. Gorlaks always seem to know where they are."

As they trudged on, Hal put another question on a subject yet unexplained.

"We expected to find this world teeming with primitive monsters. So far we've only heard one, and seen a number of little, rabbit-sized creatures? Aren't there many big reptiles?"

"According to history, there were plenty, but they've

mostly been killed by us or by the Wots. You see, rifles can do a lot in eight hundred years. A land reptile, that is, a large land reptile, is rare now, but there are plenty of weird things in the seas and rivers. That's been one of our greatest stumbling blocks. We think it probable that, although there is a great deal of water, there is more land than the continent we know, but we can't find out for certain."

"But surely, in all this time—"

"Think of our conditions. Nobody has yet managed to make a ship able to withstand the bigger marine monsters. If such a ship were built, there would then be the fuel problem. Such coal as we have is, geologically speaking, very recent and very poor, at that. On Earth you are said to have hard wood which burns well, but all our vegetation is soft, with a high percentage of water. Some of us have been drilling for combustible oil, but we have found none. It is no good depending on wind, for there seldom is more than a breath stirring.

"We have been able to manage a compact storage battery for our planes and other purposes, but it is no good for long-distance work. Besides, even in this continent there are some parts where planes are attacked by *pteranodons*, almost as big as the machines themselves—even the *pterodactyl*, which is comparatively small, is likely to wreck a plane if it should fly at it. Luckily they have learned to avoid these parts."

"WHAT a happy planet," remarked Heerdahl, who had joined them. "But the things which really get me are how and why you use ornithopters—we were never able to do anything with them on Earth?"

"Oh, that's easy. None of our ground is clear for take-off or landing, what's more we can keep very little of it clear if we try. It's always like this again if left for a few days." Knight kicked a bunch of tangled white growths. "The water's out of the question for a plane, as it is for a ship. So that killed the idea of a screw-driven plane. None of our chemists has been successful in duplicating the explosives which drove the *Ark*, and the only men who knew the secret were killed when the ship landed. So that puts rockets out. The only thing to do was to evolve something which would cope with both our conditions and limitations."

"But the lift?"

"You must remember the denseness of our atmosphere, and the way design advances when concentrated upon."

Heerdahl nodded.

"I'd like to examine one of these machines of yours."

"You'll have a chance soon."

Vida had been looking worried ever since they had left the clearing. Now, with a quick glance round to see that none of the Gorlaks was within hearing, she asked:

"Are you sure that it was quite safe to leave the Gorlaks to watch?"

"Safe?" Knight looked puzzled.

"I mean are they quite trustworthy? There's no chance, for instance, of them giving warning to the Wots that we are here?"

For a moment Knight looked indignant at the questioning of the little creature's loyalty. Then he remembered that Vida could not be expected to understand.

"The Gorlaks are our friends," he said with slight reproof in his voice. "They keep well away from Wots, in fact we gave them rifles to shoot Wots."

"You gave them rifles to use against your own kind?" Vida asked incredulously. "Why?"

"Partly because Gorlaks are a delicacy to Wots."

"You don't mean—?"

"Yes, they eat them."

Vida's eyes widened with surprise and horror. Instinctively, she looked back along the line to the mother Gorlak and that little furry-headed baby which regarded the world so solemnly. She shuddered and felt suddenly sick.

"No," she said. Heerdahl burst in.

"But they're—they're—good heavens man, it's almost cannibalism."

"That's how we look at it," Knight nodded. "The Wots, however—"

A high pitched cry in the rear, cut him short and brought the party to a halt. Arrul came up the line, bringing with him a Gorlak who panted heavily.

"What is it?" Knight asked.

The messenger reported that about fifty of the Wots had left the clearing where the ship lay, and made off into the forest.

"Following us?"

No, the Gorlak said. They were away on the left somewhere, but he had thought it better to report.

"Quite right," Knight agreed. He considered for a moment. "I don't suppose it means anything but, Arrul, you might scatter your folks and keep a lookout."

"Gorlaks," he remarked as the march was resumed, "are wonders for not being seen. They'll find out what is happening, all right."

"YOU were talking about the Wots," Heerdahl prompted.

"It is difficult to explain them without delivering a lecture," said Knight. "You see, so many causes have combined to make them as they are. Firstly, you must remember that they are descended from a fanatic or the close followers of a fanatic. It is even probable that Watson became thoroughly unhinged towards the end. He certainly compiled a remarkable book which seems to consist in part of an old work called the Bible, but mostly of his own instructions and prophecies.

"The Wots have so based their customs upon him, that in the course of time the teaching of Watson, himself, has become more important to them than the earlier part of the book. I have heard some of our scholars say that as Moses was to the Israelites so is Watson to the Wots—that conveys little to me but, perhaps, more to you."

"You mean that they almost worship him?"

"Some of them go further than that. There are figures and shrines set up to him in many places."

"But their attitude to the Gorlaks?" asked Vida.

"That is an outcome of Watson's teaching. He might not have approved of their manner of treating the Gorlaks, but he wrote that man is the supreme work of God, and is the only possessor of a soul—therefore the Gorlaks are considered to be animals just as much as any of the reptiles. The slaughtering of the little grey people has become almost a point of honor with the Wots—a sort of defence of their own status."

"That sounds like a kind of logical madness."

"It is. You see, not only do they practice natural

birth and shallow incubation, but in the absence of any food problem or any form of control, they have been able to breed promiscuously and at random—with some queer results. While we Dingtons realized that breeding, in such a small community, must be carefully watched so that no one strain will become over-emphasized, the Wots took no such care.

"Inbreeding is not harmful provided that the stock is well-matched, but among them the strain of Watson's mania—and possibly that of several of his followers—was allowed to run riot. The result is that the unstable and fanatical race of Wots is more than twice as numerous as our carefully-raised nation of Dingtons. We are beginning to be faced with a number of very grave problems."

"So the Wots really went native."

Knight looked puzzled; the phrase was evidently unfamiliar to him. Hal explained:

"I mean that we have a similar problem, though a small one, on Earth. In the tropics we find that a white man either conquers the conditions, or is conquered by them. There is no maintaining an easy level. It would seem, from what you say, that the Dingtons have conquered Venusian conditions, while the Wots have been beaten by them."

"That just fits it," Knight agreed. "Except that you flatter the Dingtons. We still have an uphill fight."

"What I can't understand about these Wot people," interposed Crawshaw, "is why the devil they want to attack us. We arrive on a perfectly friendly visit, and the first thing they do is to lay siege to our ship. Why?"

"Just because you are blasphemers."

"We are?"

"Watson told his lot that the Earth was destroyed—they've always hated us because we said it was not. Now you have turned up and, from their point of view, you are a set of living blasphemies."

"But surely—well, hang it all, don't we prove that the Earth still does exist?"

"That annoys them all the more—you obviously have not had much to do with a fanatical religion. Its very strength is its own immense obstinacy. If they once admitted that you have really come from Earth, then all the doctrine of Watson would begin to totter."

"But—"

"Look out," Knight cried, in sudden alarm.

Hal checked immediately. There was a sweet flavor in his mouth and nose. He tried to speak but the words would not come. His head swam and he had a sense of horrible sickness. Dimly he was aware of a hand firmly gripping his arm.

CHAPTER X

The Wots' Ruse

HAL'S first sensation when he opened his eyes was a splitting headache. He lay for a moment on his back, looking up through the pale branches. The sky was darkening, but still shot with vivid streaks of color. Something stirred beside him and in a flash he remembered recent events. He sat up with a groan at the stabbing ache which the movement caused. At one side, Knight crouched with his head in his hands, while on the other Arrul squatted, looking at them both with concern.

"Oh, Lord," he muttered, putting both hands to his temples.

"It'll pass in a few minutes," Knight's muffled voice assured him.

To Hal's astonishment, the prediction proved true. The ache lifted as suddenly and definitely as if an actual weight had been removed. He looked around for the rest of their party. No one else was in sight, and he turned anxiously upon the other.

"Where are they? What's happened?"

Knight looked at him miserably and shamefacedly.

"Wots," he said. "Arrul thinks that the large party of them which left the clearing, made a quick march and cut us off. He couldn't get back in time to give us any warning."

"But why didn't they take us with the others?"

"Overlooked us. Arrul turned up at the last moment and dragged you into the scrub. I managed to stagger there as well, and he contrived to hide us both. Don't talk too loudly—there may be some of them still about."

"But, man, they've got Vida, Temberly, all of them."

"I know, but we can't help them if we get caught too."

"What will they do with them?"

Knight shook his head. If he knew he was not going to tell.

"To think that I was caught with an old trick like that," he said, with a mixture of disgust and remorse.

"Like what?"

For answer, the other pointed to a plant which grew close by. Hal could see that it was the same kind of Venusian flower which had earlier covered Temberly with pollen.

"They wedge the petals apart with a little rod and pour a kind of powder inside. Then, having attached a fine wire to the rod, they clear off to a safe distance either leaving the wire in the victim's path, or taking the loose end in their hands. The moment the wire is jerked the rod slips, and down comes the upper petal, puffing the powder out like a poison-gas cloud. Then they just come up and collect those who were near enough to breathe any of it, and tie them up before they have time to recover—it's a common Wot trick."

The last of the light had almost gone. Knight turned to Arrul.

"Can you take us through the dark?"

The Gorlak nodded. He never spoke unnecessarily. Knight seemed a little cheered.

"With luck, we'll be in time. They won't have got the others to the clearing yet. Wots never travel by night—they'd have to use lights and that would make them too good a mark for the Gorlak snipers. If we can get somewhere and send Chicago a message, we ought to be well on the way by dawn."

"I suppose they will be taking the others to the clearing?"

"It's an even bet. Let's get on."

Led by the little Gorlak, they stumbled on through the dark forest.

LUCY, on the *Nazia*, spent an uneasy night. It had been decided that, since they were perfectly safe, the best course was to follow ordinary routine. According-

ly, after supper they retired to bed. She soon found that the prospect of sleep was remote, seeming momentarily to recede further. She tossed restlessly listening to the snores which drifted down the corridor from those two hardened campaigners, Mackay and Freeman. She envied them their power of detachment.

Her Madonna-like face bore wrinkles as she worried over the safety of the other party. The message flashed to Smith, "*Going for help now*," had been so brief and uninformative. She wished it had told more, though, of course, there had been the risk that the besiegers might have noticed.

"Going where? And to get help from whom?" Lucy asked herself.

Several times she crept quietly from her cabin to the main living room and peered out at the attackers. In the dim light she was able to see that they had not left their posts, but lay sleeping on the open ground. What were they waiting for? Surely they must realize that the *Nazia's* stores could support those inside for weeks, if necessary. But, if it came to that, why should they be hostile at all? None of the crew had offered fight until attacked.

Once more she climbed back to her berth and this time, while her thoughts wandered off after Temberly and the others, sleep overtook her.

It was Smith who woke her in the morning.

"Come here," he was whispering from the doorway.

"Go away while I get dressed," she commanded. "What is it?"

"It's the men outside. Come and watch them a bit."

The half-naked savages were all awake now. Some had made off for the forest, presumably in search of food, others were obviously on guard duty, while still more amused themselves according to their lights. It was to a group of the latter that Smith pointed. He and the girl watched them in silence.

"What's wrong with 'em? Have you ever seen people behave like that before?"

Lucy turned her head away. She was feeling sickened and disgusted and her face showed it.

"Yes," she said. "Once. It was amongst the more dangerous patients in a mental home."

Smith nodded.

"I wondered if that was it. But the queerest thing is that the others don't seem to take any notice of them. Do you suppose they're all mad?"

"Either that, or they are so used to it that they don't notice," Lucy replied. With an effort, she had overcome her instinctive revulsion and was watching critically again. The two engineers entered the room and stood behind them.

"What is it?" Mackay asked. Lucy told him.

"By gosh, you're right," he agreed after a few minutes' inspection. He gave a grimace of distaste; the normal man's first reaction.

"No good thinking of parleying with that lot," he said decisively. "We stay right here until the others bring along an army of keepers, or whatever it is they've gone to fetch."

He turned away from the spectacle outside and shepherded the rest to the middle of the room.

"Now we are going to eat," he announced. "What shall it be for breakfast?"

"I don't think I—" Lucy began.

"Oh, yes, you are, young woman. You needn't think I'm going to let you be put of your food by a bunch of lunatics, not even if I have to stuff it into your mouth myself. Come along and see what there is in the larder."

UNDER Mackay's spell of cheerfulness, they almost managed to forget the loose-lipped creatures and their unpleasant antics outside. By the end of the meal, they felt a great deal improved in spirits. Mackay asked:

"Now what are we going to do? We don't know when the rest will be back, so we might as well get on with something useful in the meantime. Now you, Lucy—"

Smith, who had drifted across to the window again, called back over his shoulder.

"Something's doing in the forest. There's a whole lot of these brutes streaking over there as fast as they can leg it, and there's another lot coming out to meet them."

Lucy picked up the field glasses and joined him. She twisted the focusing screw for a moment, then the glasses fell clattering to the metal floor. She swayed and went suddenly pale.

"What the—? Catch her, she's fainted!"

Mackay snatched up the fallen glasses.

"My God," he said, "they've got them!"

Nobody spoke for a moment.

"Hal's not there. Good man, Hal, he's dodged them. There's still a hope that he will be able to get help unless—" He stopped abruptly as the possibility of a grimmer cause for Hal's absence struck him.

The advancing Wots brought their prisoners close to the ship and arranged them in a row before the window. All had their arms tied behind their backs and looked weary and disheveled. Various of the Wots had proudly possessed themselves of the rocket-shell rifles and pistols, but the other accoutrements remained with their owners, even Freda's camera still being slung upon her side, and Crawshaw's machete dangling from his belt, tantalizingly out of reach of his bound hands.

Temberly, white-faced, looked up at them and raised his eyebrows inquiringly. Mackay caught his meaning and nodded, pointing behind him to where Lucy lay. Vida stood among the captors with a cool aloofness, while Heerdahl appeared to be testing the effect of a potent flow of rocket-service language. One of the Wots hit him a blow across the mouth, sending him staggering to his knees.

"Swine," said Mackay under his breath.

"I don't like the looks of this," Freeman murmured.

"You're right—it's pretty ugly."

There was a pause while several of the Wots consulted. One pointed to the two women, but the rest shook their heads. Then Temberly appeared to catch their notice, and they nodded agreement to some plan. The little biologist was roughly pushed nearer the window while the rest of the prisoners were drawn aside. One of the Wots produced a length of thin cord, tied it into a loop, and placed it about Temberly's head. Mackay's fists clenched whitely as he glared in futile helplessness.

"This is hell," muttered Freeman.

The Wot slipped a short rod through the loop, and began to twist . . .

A sound which was half whimper and half scream startled the two engineers. They swung round to see Lucy rushing from the room.

"By heaven, she's right," cried Mackay, "we can't stand for that."

He charged after the girl, catching up a machete as he passed.

"THE Wots' ruse was successful," Heerdahl told Hal afterwards. "It was bound to be. Those four could not stay quietly inside the *Nazia* watching poor Temberly's eyes almost start from his head and seeing his face go livid with agony while the Wots gleefully tightened the cord. Crawshaw and I struggled like mad, but we couldn't do a thing other than tell the Wots what we thought of them. Yes, they got the others out of the ship, all right, but you ought to have seen them come.

"There was a big bunch of Wots waiting by the port, all ready to pounce—you could see them crouch for the spring as the door began to open. But they didn't know Mackay and Freeman—nor did we until then. Those two plunged out with heavy machetes whirling like wild buzz-saws. Man, it was astounding; they must have mowed down half the gang in the first rush, then a lot more Wots ran up to help.

"Mackay and Freeman stood back to back and hewed at the ring around them. I could see Mackay's face, and I'll never forget the way he grinned as he laid about him. Over his shoulder I could see Freeman's head bobbing about, bound with a white bandage—he wasn't doing too badly, either. None of the Wots dared to try a shot at such close quarters. And, believe me, those Wots in the front were just sliced, there was no dodging, because their pals at the back were pressing them forward.

"There was another bit of fireworks going on round Temberly. Lucy came out of the port, slid around behind the mill the other two were making, and rushed for the man who was doing things to Temberly. Her fingers were crooked like claws as she came tearing at him. Lord, man, you should have seen his face when she'd finished—well, it just wasn't a face, that's all.

"Of course, it couldn't last. Somebody put a rifle stock in the way of Mackay's machete and knocked it out of his hand; even then it nearly decapitated another Wot as it flung free. Mackay still smiled. He doubled up his fists and started busting their jaws, but they piled on him and then got Freeman from the back. Some of them managed to grab Lucy, and then they'd got the lot of us—except Smith. Nobody had noticed him in the general dust-up. We thought he must still be in the *Nazia*, but one of the Wots gave a yell and pointed. There was Smith, he'd got through somehow and was legging it for the forest; he was mighty close to it, too. About six or seven Wots fired at once. That was the end of Smith, poor devil.

"We began to wonder what was the next ingenious little beastliness in the Wots' minds. It wasn't long before we found out."

CHAPTER XI

Rescue

ARRUL, the Gorlak, led Knight and Hal forward unerringly. At times the growths became so thick that even the dimness overhead was blotted out, and they were forced to hold one another to keep together in the darkness.

"Can the Gorlaks see at night?" Hal asked.

"Very little better than we can, if at all, but they seem to have some warning sense of obstructions—I've seen blind men avoid things in the same way. The doctors say that it is due to sounds being reflected by the objects."

They trudged monotonously on in silence. Hal was unable to see his watch, but it seemed certain that several hours had passed before they at last worked clear of the trees and stood on the edge of a large open space.

"That was very well done, Arrul," Knight said. Turning to Hal he nodded:

"From here, we can 'phone Chicago to be ready."

"From where?"

Knight pointed ahead. Hal gradually was able to make out the bulk of a huge building, so little darker than the sky which backed it, as to be almost invisible. While they were hurrying forward, Knight drew a small whistle from his pocket and produced that same wailing note to which Arrul had earlier given answer. Some seconds later, doors in the building opened to emit a beam of light which momentarily dazzled the three. They ran forward, Knight calling to the men silhouetted in the opening. To Hal, the diminutive appearance of these guards gave a new idea of the scale of the building. Soon they passed in through a tall archway and the gates clashed behind them.

"Wait here a minute," Knight said.

Hal watched him disappear through a small doorway, and then turned to study the surroundings with growing astonishment. It was evident, at once, that this was no single structure, but a whole town. The lighting was dim, for, as he guessed, the inhabitants were most of them asleep. But it showed enough for him to see that the buildings were arranged in concentric circles, and that he was standing between the two outer rings.

Straight ahead a large archway pierced the facade and through it he could see the road continuing for some distance, alternately dark and light, as it passed under more blocks or across more open spaces. Lights were showing here and there from scattered windows both in the ring before him, and in that through which they had entered. He was puzzled that no lights had been visible as they approached and asked Arrul the reason.

"Snipers," said the Gorlak with his customary economy of speech.

The guardians of the gate had been regarding Hal with a deep interest. It was obvious that they knew him for a member of the rocket ship. One of them overheard his question, and volunteered information:

"Originally, we were never safe from the Wots. Our only method of preserving ourselves from their marauding bands was to wall our cities solidly, and leave no opening for bullets. The Wots were far bolder in the old days than they are now. A century ago this city had to stand sieges, but even now the walls are necessary, as the Gorlak said, to save us from being picked off by snipers. One could fight an army, but against sharpshooters . . ." He completed the sentence with an expression of disgust.

Knight came hurrying back.

"I've got through to Chicago. They're getting things

ready. We ought to be able to get there before they start, if we hurry."

The guards had wheeled out a long, low, black machine. As the two slipped into their seats, Knight turned to Arrul.

"Collect your people and wait for us," he said.

ARRUL nodded solemnly, and the car slid off towards the center of the city.

"Straight road all the way to Chicago from the opposite gate," Knight explained to the mystified Hal. "We rarely go out of the cities at night, but we've got to risk Wot bullets this time."

Their approach had evidently been signaled, so that the far gates stood open and ready for them to shoot out on to a broad highway. Knight crouched lower over the wheel and put his foot down. The machine was remarkably silent, and seemed to go like the wind. Hal remembered that the other had spoken of storage batteries as almost the only method of powering on Venus. As they sped through the night, he asked:

"Why don't you use radio? A portable transmitter would have saved us hours—in any case, I should have thought it was a necessity on this planet."

"Won't work," Knight replied, his eyes fixed on the road. "Somebody's always got new ideas to make it possible, but they never work out. You see, we've not only got two or three reflecting layers, but reflecting curtains, as well. It would be easy if they were constant, but their always shifting with temperature and climate. Apparently quite haphazardly—at least, no one yet has been able to predict their movements. Radio's worse than useless if it is ninety-nine per cent certain to let you down."

Hal remembered his own transmitter's failure to raise the *Nazia* and nodded comprehendingly.

Knight, concentrating on driving, was quiet for a while, and Hal lay back in his seat to ease his weariness. He was almost dozing when the glare of lamps down the road, startled him. Knight sheered the black machine to one side, giving room to a row of heavy, squat shapes.

"Tanks," he said gleefully, "they've not lost much time." A few moments later he pointed ahead:

"Chicago."

This time, it was no lightless city that they approached instead, the whole massive outer wall was bathed in a flood of whiteness.

Closer, Knight ran the car off the road, and sprang out. Hal followed, bewildered at the sight before him. The Dington forces were assembling for action.

The foreground was a scene of rushing activity, while behind, the wall of this new Chicago swept up in the floodlights like an enormous black cloth. Hal was struck with a sense of incongruity. In front of what might have been the ramparts of some medieval city, he could see tanks swiftly crawling from the huge main gateway on to the road. And, every now and again, a shadow as of a monstrous bat passed across the wall as one of the strange Venusian flying machines sank flapping, to take up its position in line. Everywhere there seemed to be a bustle and confusion, and a shouting of commands.

Knight hurried over to a group of officers and spoke for a few minutes, then he returned to Hal.

"That's fixed," he said. "They're letting us have a three-seater machine, and we start in ten minutes."

The take-off of the ornithopter was a curious sensation for a rocket pilot. Knight first depressed a lever on the dashboard and there was a rapid fluttering of wings outside. The whole craft vibrated uncomfortably as it lifted and began to rise straight up. Looking left and right, Hal could see a long line of the machines churning the air in similar fashion. Down below, yet another detachment of tanks was streaming along the road.

"Looks as though your whole military force must be in this," he said.

The other grinned.

"Most of it is, and feeling pretty sore, too. After all, we've waited for you for eight hundred years and we feel you've had a pretty poor reception."

As he spoke, he leaned forward and made an adjustment. The shuddering of the machine stopped abruptly, for a moment it seemed to hang, then the wings slowly began to move again, this time with great, surging beats. Hal could see that at the bottom of their strokes, the tips reached well below the level of the landing gear, and he understood why the rapid, short movement had been necessary in rising. At first, the occupants were forced back in their seats as each heavy sweep forced the plane forward, but once the desired speed was attained they seemed to swim smoothly on in a silence broken only by a swishing which barely penetrated to the cabin.

"IF we are going straight there, what about the tanks? They'll be far behind, won't they?" Hal asked.

"They aren't too slow on the road, though the forest will hold them back a bit. The Chicago tanks are really a reinforcement; those from the other cities ought to arrive much the same time as we do," Knight explained. "You know," he added, "your arrival has precipitated a proper war. Most of us have been waiting of having a slam at the Wots on a big scale for a long time; now we've got a cause which overrides all the peace party's protests."

The sky was beginning to grow lighter. In the thick air of Venus, the dawn was a spectacle of rioting color to make Earthly dawns a dull memory. Knight began to look worried. They were still some distance from the *Nazia*, and he was afraid of the things which might take place before they could arrive.

The day was nearly an hour old when they passed over the end of the road, and the city at which they had called in the darkness. They could see that the spaces between the concentric rings of buildings were filled with Dingtons who looked up, waving to the fliers as they passed. Faintly the sound of cheering rose to them and then dropped behind as they sped out over the forest. Knight pointed down to the lanes of crushed debris streaking the country below.

"The tanks are on ahead," he said.

It seemed to Hal that they flew dangerously near the ground, but he found that all the other ornithopters were on the same level, and realised that, as the day grew warmer, visibility was shortening in a way which made spotting from altitude quite impossible. Already the two far wings of the aerial fleet could only be dimly seen.

Half an hour later they caught up the tanks. Hal had only received a distant impression of these during the night; now an exclamation escaped him as he gazed down. The machines were traveling on both wheels and tractor treads at a rate which was almost half that of the fliers. At the front of each projected two supports, holding what

at first appeared to be a disk of bright metal. A nearer view showed it in reality to be a wheel of knife blades, revolving in the horizontal plane at high speed. By these devastating instruments, the soft growths were being swept away like melting butter, and the remains crushed to a dirty white pulp beneath the grinding tanks. Hal shuddered at the thought of the carnage should any of the Wots attempt to obstruct the monsters' paths.

A blasting roar from somewhere not far ahead, jerked him back to the matter in hand.

"Rockets," he exclaimed. "The *Nazia's* rockets, what the devil are they doing?"

A moment later they reached the clearing and could see the glimmer of the ship's hull. As they swept towards the clustering Wots, Knight pressed his machine gun button. He purposely fired high for fear of hitting the prisoners, but the effect was instantaneous. Scared faces turned up for one glance at the descending fleet of ornithopters, and their owners scattered in every direction.

Scarcely a shot was fired in reply as the hundreds of Wots bounded for the safety of the forest. Several planes sank fluttering beside the Nazia where three bound figures stood; the rest hunted the fleeing Wots to the trees. From one side of the clearing rose shrieks of terror as the wretches found themselves trapped between the pursuing machine guns of the ornithopters and the deadly tanks breaking over ahead. As the machine landed, Hal sprang out and ran towards his roped friends. He noticed that the *Nazia's* port stood wide open, and a horrible fear gripped him.

"Where are the rest?" he demanded as he cut Temberly's bonds. "Where's Vida?"

"Those devils have got her; carried off all three of the women," said Crawshaw.

"And the men?"

"Dead, like we'd have been in another ten minutes," Heerdahl replied.

"Which way did they take the women?" Knight asked.

"Over there," Crawshaw pointed. "A plane like one of these came along. They bundled them all three into it and flew off that way."

"Damn them," said Knight. "I've always said that they'd got hold of some of those machines which were reported wrecked."

He turned to an officer.

"Find accommodation in planes for these two men," he directed, pointing to Crawshaw and Temberly. We'll take the other with us. Put some tanks on guard here. We've got to be quick. You two get aboard," he added to Hal and Heerdahl.

Hal demurred momentarily.

"What about taking the *Nazia?*" he suggested

Knight took his arm and urged him towards the ornithopter.

"No good for this job. Too big, and besides, you can't use your guns. Come along, time's precious."

The great wings threshed furiously, and again the machine shuddered into the air.

CHAPTER XII

Finale

THE clearing slipped behind and they were able to catch glimpses through the trees of feverish activities proceeding below. There was the sound of intermittent rifle fire. Knight pointed down.

"Arrul and his people are on the job," he said. "There's many a Wot down there who wishes he had never developed a taste for roast Gorlak."

"Good luck to Arrul—I'm with him altogether," growled Heerdahl.

"Judging by the sight around the ship, you didn't do so badly yourselves," Knight commented. "I didn't count the Wot bodies, but there were plenty of them."

"Not my doing, worse luck," said Heerdahl. He went on to tell of the heroic fight of Mackay and Freeman, and the death of Smith.

"The next thing," he continued, "was the arrival of the flier and the kidnaping of the women—and there were we, each with a dozen Wots hanging on to us, and all tied up, too. It was hell. We couldn't do a thing but kick out, though we did that hard enough. After the plane had gone, they thought it was time to take it out of us, and started giving nasty looks at Freeman. He'd paid out a number of Wots in the scrap, and they weren't pleased about it—they weren't fond of Mackay either, but he had been disarmed a bit sooner than Freeman.

"Well, they held a bit of a talk and began to look so pleased with themselves that we knew something pretty beastly was in the wind. With nasty grins, they hauled Freeman away from the rest of us. First they ripped off his clothes, and then they tied a rope to each of his ankles and wrists—that wasn't too easy: Freeman's were tough fists, but they did it, and started dragging him towards the stern of the *Nazia*. It was only then that we saw their idea, and we had to stand by and watch them tie poor Freeman across the rocket exhaust tubes. One of the Wots went into the ship.

"I guess Mackay just went mad then. God knows how he broke loose, but he did, and before we knew what was happening, he was on that crowd with a machete in each hand—carving at them with strokes which ripped them to bits. I've seen a few rough houses in my time, but Mackay's show made them all seem like petting parties. The Wots just melted away in front of him—those who didn't get sliced. I don't blame them, either. I know I'd have moved fast if I'd been faced with those two machetes and Mackay's grin behind them. He ploughed through the gang right up to where Freeman was spread-eagled over the tubes. He'd only time to slash one of the ropes through before the Wots were back at him and he had to turn on them.

"It was just then that the Wot executioner found the rocket keys. He couldn't see from the control desk what was happening back at the stern, so he just pressed.

"There was a gush of flame, with a roar which nearly split our ears, and the whole ship slid a couple of yards forward."

Heerdahl paused a moment, then he added:

"When the smoke cleared, there was no sign of Mackay nor Freeman—they had been flashed out, and two dozen Wots with them. It was a mercifully quick end . . . A couple of minutes later, you turned up."

For a time, nobody spoke. Knight's look was grim as he pushed the ornithopter at top speed. Hal seemed to be staring blankly ahead, all expression wiped from his face. It was Heerdahl who felt that he must break the silence his own story had created.

(*Continued on Page* 1379)

WHY THE HEAVENS FELL

By **Epaminondas T. Snooks, D.T.G.**

(Illustration by Paul)

The hum of machinery filled the air; the glow of tubes, here and there, agitated the ether with rays of whose nature I could define no idea.

WHY THE HEAVENS FELL

by the author of "The Monkey-Men of Meneginia"

"HERE is a check for seventy thousand," said the Old Man. "I want you to take it personally to old Snigglefizz and, while you're there, see if he has anything new to spring that we can sign him up on—and, for the love o' Mike, don't let him put over any lemon that will set us back like that Aleithograph gadget did. Don't let him give you any song and dance about 'scientific values'; what we want is something that will make good money, like the Zeta Eta. Draw a couple of hundred from the cashier; there isn't much chance to spend money up in that neck of the woods, so you'll go light on the swindle sheet."

I left the office with a check for $72,002.50, drawn to the order of Professor Hans von Schnickelfritz, on royalty account. The seventy-two thousand was the quarterly advance on the professor's share of the profits from the Zeta Eta Theta ray machine, which has such marvelous powers in reducing the symptoms of obesity; and the $2.50 covered the sales of the Aleithograph, whose rays have almost occult power in compelling the person irradiated by them to speak the truth, and nothing but the truth.

E. T. SNOOKS, D.T.G.

This machine, wonderful scientific discovery that it is, had proved salable only to police departments; and, after the courts had granted several injunctions against its use, and numerous damage suits had been filed against us, as its manufacturers, we had reluctantly discontinued the model.

Now it was my assignment to venture into the lair of the eccentric scientist, where he pursued the researches which had proved the total inadequacy of a single Greek alphabet to describe all the rays which he had produced and turned to his marvelous uses.

It was time that some new brainchild of his should reach suitable maturity, to prove an added breadwinner for the professor—to say nothing of the Supernational Electric and Radiation Corporation, one of whose field men I am.

A brief search of the railway guide showed that one lone day-train crawled its weary way into the hills among which the professor had sought to obtain the privacy so essential to his temperament. From thence I could escape only by a second train, grossly overpraised as an "accommodation," which would return me in time to wish my milkman a cheery good morning as he made the rounds.

It is not surprising, therefore, that I was not overjoyed at the intervening necessity of giving a pair of country cousins a view of the night life of Manhattan—and the consequent opportunity to discourse of the wickedness of our great city for months after their return to Podunk. However, I did my duty as a host with all the courage I could summon up and, with very little rest thereafter, departed on my wearisome journey to the professor's country estate near Rough Neck.

After excruciatingly unsuccessful attempts to repose in a single day-coach, which had seen better days during the administration of General Grant, I finally reached the shack which made a pretence of being the grand central terminal of Rough Neck; and induced the owner of a venerable Model T to transport me up a ravine road to the professor's domain at Maxwell Manor. My conductor, however, put me off at the main gate, refusing to venture up the driveway in the face of a large placard which bore the words:

"KEEP OUT! DANGER!
60,000,000 VOLTS!
TRESPASSERS WILL BE
ELECTROCUTED!"

It was evident that the professor's neighbors believed in signs, and I felt half-inclined to agree with them. However, my business errand should be sufficient to protect me against a menace that might appall even a lightning-rod agent: and I picked my way gingerly toward the house, keeping both eyes open to be sure that there were no live wires around me. I glanced over my shoulder, and saw that the driver of my car had ventured to do the same; probably with a view to determining whether there was as yet any news to report to the local coroner.

WRITERS of scientific fiction, as well as scientists, are continually trying to redraft the laws of the universe. The scientist, however, must bear in mind that no change can be made without considering its effects on the whole body of scientific knowledge. Every known fact must fit with every other fact. At present, it is true, scientists are scratching their heads to make the code fit the inside of the atom and the outside of the universe, which are too small and too large, respectively, for exact observation.

The science fiction writer must also be careful, when supposing an addition to our scientific knowledge, or a departure from the accepted theories, that his other facts remain in harmony with it. If he proposes to nullify gravity, he must accept all the logical consequences of the nullification; if he conceives a new ray, it must have a certain relationship to the radiation now known.

The author of this extraordinary story—not too seriously, perhaps—follows a single principle to a logical but surprising conclusion.

AS I reached the front steps, there came into view a large opening, above which was written in brilliantly-illuminated neon tubes: "Beware the Dog!"

"Where be the dog?" was my unspoken question; and then there emerged into sight, through the opening, a figure, somewhat canine in suggestion, but obviously mechanical. Nevertheless, harmless as its cylindrical iron body and large rubber-tired wheels might be, the sets of large steel teeth, set around a central frame like that of a lawn-mower, had a distinctly menacing look. I had no desire to be converted into raw material for hamburger steak; and the infernal contraption looked decidedly carnivorous.

Undoubtedly it was operated like a televox by some means of command; but I had no idea what the magic signal that would put this Cerberus back in its kennel might be. I thought that, perhaps, to make a noise like ready money would soothe its mechanical growling; but whether the canine robot would recognize negotiable paper, was a subject for doubt. I began backing up, looking for an opportunity to sidestep.

Providentially, however, the professor himself chanced at that moment to appear upon the scene.

"*Donnerwetter!*" exclaimed the great scientist: "*Pumpernickel!* Am I forever to be plagued by these *Schweinehunde* of newspaper men? Go away!"

I raised the pink slip above my head and waved it frantically. "Professor!" I cried: "Your money! From the Supernational!"

"Stand where you are!" he commanded: "Give it to Tauser, and he will bring it here."

With trepidations as to the bankability of the check after the operation, I entrusted it to those iron jaws; the mechanical dog's teeth closed upon it more gently than one might expect from his bulk, and the heavy spiral spring behind him actually wagged as he bore the paper to his master. The latter examined it; and dismissed the strange watchdog to his hole with the aid of a searchlight whose beams were invisible.

"You must excuse this suspicion, young man," said the now mollified Schnickelfritz: "But the greatest of precautions are none too stupendous. It was but yesterday that Tauser was enabled to rescue me, only with difficulty, out of the jaws of two life-insurance *Schlemiehls* who had laid in wait for me."

"Come into the house," he added genially, "and I will give you a cordial for the fright you have had."

He led the way into his living quarters, which occupied but a small portion of the vast lodge—the rest being devoted to his scientific library and apparatus—and produced what I fancied to be a black bottle. He did not, however, proceed to uncork it; but solemnly waved it in close proximity to my person, up and down, in front and behind, to the right and left; and then replaced it on the shelf.

"That administration of the Kappa Sigma ray, my friend," said he, "is equivalent to the consumption of a centilitre of good Holland schnappa. I am confident that, when I have perfected it, the execution of the laws of this country will be highly ameliorated. And now, why the necessity of your paying me this visit, at some hazard, to bring with you a piece of paper? Has there been an interruption of the mails?"

There was no use endeavoring to conceal the truth from the inventor of the Aleithograph; who might well, at that very minute, have switched an unseen battery of those uncanny devices upon me. I hastily made known the desire of my employers to learn whether the professor had added lately to his list of discoveries any other which might redound to the advancement of science, the benefit of mankind and—since they are practically synonymous—the financial welfare of the professor and of ourselves—who were, if anything, the more synonymous of the parties in interest.

The professor listened, eyeing me from beneath the shaggy eyebrows which are characteristic of all great scientists. Suddenly his face lightened: "I have it," said he, and threw open the door into a vast room.

Like the laboratories of all fictional scientists, it was filled with gigantic, involved machinery, of whose nature I could form no just conception. The hum of machinery filled the air; the glow of tubes, here and there, agitated the ether with rays of whose nature I could define no idea. I did puzzle for an instant as to why these rays, all of wavelengths far too long or too short for the human eye, should be distinguishable: yet I knew that all wonder-working rays are either red, blue or green, when they are not yellow.

The professor divined my thoughts. "My friend," said he: "Just as a chemist puts poison into a bottle of distinctive shape and color, so it is necessary to mix a little light with each ray, lest one should come disastrously in contact with it. Don't stumble through that blue ray there! It might be unfortunate; as I understand that there is a popular suspicion of the morals of all persons who have green complexions, such as you would acquire by the contact."

I stood quite still while the great Schnickelfritz advanced to what appeared to be an electric furnace. He pulled switches—and a drone, which had seemed to permeate the whole laboratory, died down and ceased. He pulled levers that evidently threw bolts, and a great round door yawned slowly open. The professor extended his arm into the cavity, and finally there came forth an aluminum dish containing an oblong block of something which I was at a loss to recognize in that odd blending of lights. He retraced his way into the living quarters, and I followed.

"Millions in It"

FROM a drawer he produced a knife and a fork; sliced into the curiously-marbled substance; and finally cut off a piece, which he tasted.

"It is quite done," he said, "and now let us have a—what you call a bite. Here is bread, and here is a bottle of water which has been treated with the Kappa Sigma ray. It is not beer, it is true, but it is wholesome and invigorating."

The sausage, while not in the least like any which I had ever before tasted, seemed quite edible; and I willingly passed my plate for a second slice. "But what," I inquired, "are the ingredients; for I cannot in any way identify this meat?"

The professor stooped, and took up from among a pile of papers a granite paving block: "This is the duplicate of the *Ersatz* sausage you have just eaten, before it was treated with my new Upsilon Omega ray! The material of the granite has been converted into highly-nourishing substances, rich in vitamins and quite capable of sus-

taining life. No longer will mankind upon the whims of nature or the bounty of Pluvius dependent be! The quartz has become a savory carbohydrate; the feldspar and the mica two proteids of high nitrogenous content. All solely by exposure to my new and easily-generated ray."

"Professor," I inquired earnestly, "have you a telephone here?"

"To call the newspapers?" he demanded frowningly.

"Far be it from so," I answered, "but a matter of important private business which I have just remembered."

"Little they know of it," said the professor, "but this little device of mine enables me to telephone to the outside world while they are unable to disturb me. Speak into this radiophone; the robot outside will complete the connection; while to all calls from the outside he answers that I am sleeping and cannot be disturbed, that I have a sore throat and cannot speak, and that I am investigating the cosmic rays among the Bernese Alps. Would it were so! But make your call."

I put through, as promptly as possible, a call to New York; and having reached my brokers' office, gave instructions to sell Packers' Preferred at the market, to the extent of my balance. I then returned to the repast with slightly-enhanced appetite. There was no doubt that this new invention would do to the meat industry what the household refrigerator has done for Jack Frost, now a gentleman without visible means of support.

"Crash!" What was that? Had one of the great machines broken down or exploded?

I speedily localized the accident, much closer to myself. Some small, and unseen, bit of hard material in the artificial sausage had opposed forcible resistance to my bite; and the result was disastrous to some of Park Avenue's costliest bridgework. I contemplated the offending substance ruefully, and turned reproachful eyes upon the professor, as I held it forth for his inspection. He too was concerned, at this apparent failure of his process. Suddenly his eyes lighted with enthusiasm.

"Beautiful!" he exclaimed, "Wonderful! My friend, it was an intrusion of jasper into the granite, and behold, the wonderful Upsilon Omega ray has turned it into actual bone. Observe the osseous structure."

"Oh, calcify the osseous structure!" I answered, somewhat annoyed, as a new thought struck me. "Professor, what is the cost of producing this brick of sausage?"

"Only nominal," he answered. "There is no attention needed, the ray machine is durable and needs few replacements. It is practically nothing but the electric current consumed."

"And that may be—"

"Only about seventy-two thousand kilowatt hours for this brick," he said. "Theoretically it should be only two-thirds as much, but there is some necessary loss."

After multiplication of my monthly lighting bill by 1800 (which I performed mentally, notwithstanding the growing ache in my jaw) and a comparison of the product with my bill at the neighborhood delicatessen (in haste too great to allow for liquor deductable) I arose and went again to the telephone in some ire.

WHILE I was going through the process of learning how many wrong numbers there are in a metropolitan exchange, I noticed the professor take up our glasses, dishes, and silverware, and heap them together in a pan which was, apparently, quite innocent of water or soap. Over it he placed a heavy cover, apparently containing a vacuum tube, and connected by a cable to a light fixture. He turned a knob.

"A little toy of my own, and of no value," said he. "As you know, no man likes to wash dishes. A turn of the switch—a moment of the Digamma Koppa rays and"—he snapped off the switch and turned the cover over—"you see, they are cleaned, dried, sterilized, polished and ready to put on the shelf."

"Buhl and Baer?" I said into the phone: "This is Slicker. Cover at once every share of Packers' Preferred you have sold for me; and sell Federated Dish-Washing Machinery short, for all my balance will stand. I'll be in tomorrow morning and put up more collateral!"

A few minutes' talk, though with my handkerchief at my aching face; and I speedily had the professor's signature for a contract, on very favorable terms to ourselves, for the Digamma Koppa device. I could already see the eloquent appeals of our advertising copywriters, addressed to single and married men alike. A boon alike to benedicts, bachelors and brides—there were millions in the new dish-washer! And certainly, the expense account described so frankly by my chief must bear the cost of new abutments for my dental equipment.

I predicted cheerfully to the professor that his royalty check would be doubled by the ensuing quarter; and, although his own tastes, as you have imagined, were simple enough, the prospect of being able to afford new super-frequency generators was welcome to him.

"The 300-kilowatt converter," said he, "is not sufficient for my purposes in the generation of the ultra-short radiation, which I wish to work further upon. Now see—" He turned a switch.

The wall of the library, opposite the laboratory, melted away in a circle three feet across; and the round opening thus made moved up and down in the wall, as the spot of light thrown by a lantern might do. On the opposite side, we beheld the books on their shelves; and sudden flickerings would blot out the bindings at their backs, so that only rough masses of paper were visible.

"That is the Nu Nu Lambda ray," said Professor Schnickelfritz: "You see its limited range. With a generator of four times the size, I could cause it to penetrate twice as far."

"Twice as far?" I asked: "Why not four times?"

"It is the Law of Inverse Squares!" said the professor solemnly.

"And that prevents you from sending the ray as much further as the power is increased?"

"*Mein Gott*, yes!" said the professor: "Otherwise I could send power by radio to New York; yes, to China."

"How long has that been the law?"

"Who knows?" said the old scientist solemnly: "For that, you must consult the philosophers."

I arose to make my departure, with the firm decision to consult our legal department instead. Professor Schnickelfritz opened a garage door and proceeded to emerge with his own private car—a five-ton truck, with which he was wont to bring up his supplies of reading matter, instruments and laboratory machinery from the railroad nearby, on occasions of receiving a shipment. I perched myself on the seat beside him, preferring that to

the option of traveling as freight, and in due course of time was delivered, somewhat shaken, at the railway station. From this, considerably later than the due course of time, I was able to board the night train and return, a wearier but more successful man than when I set out from the city.

My diplomacy in obtaining a contract, so promising of rich returns, won for me a check which more than covered the damages I had experienced in my visit to Rough Neck. The Old Man himself praised my perspicacity, and arrangements were made to put the Digamma Koppa Household Friend—otherwise the "Wypenomor"—into immediate production and publicity. The sales engineers of the company predicted that ten million dollars in retail sales the first year would be found too conservative an estimate.

The Lobby Gets Busy

FLUSHED with success, I laid before the Old Man the secret which the professor had confided to me at the last moment: the possibility of radio power transmission, if once the law that hampered us could be done away with. "To undertake to disregard it outright," I said, "with the elections coming on, is to invite too much campaign publicity; even if the overhead expense for official connivance isn't too high. But I understand that this Law of Inverse Squares is a pretty old one; and it may be possible to get a court decision that it is obsolete, or at least, to be interpreted in the light of modern business conditions."

"Better than that," said the Old Man, with that immediate grasp of the situation that makes him a leader of international business: "I think it possible that we can get Congress to repeal it. Slip the repeal clause into an appropriation bill in conference, just before the inauguration, and it will go through, without too much notice to some of the outsiders who would like to get in on the ground floor. I'll get Senator Bloughard on the phone this afternoon. Leave it to me."

He was as good as his word; and when the appropriation bill came up in conference, in the closing hours of the short session of Congress, Bloughard had inserted our clause repealing the "Law of Inverse Squares."

"I am opposed," said Representative Fudge—the old mossback from the Mud Turtle State—"to any such assumption of powers by the Federal Government. The framers of the Constitution, sir, the grandest document ever struck off by the mind of man, reserved the powers of regulating such matters of public welfare to the several states, or to the people thereof. I am not familiar with the Law of Inverse Squares; but I feel it my duty to protest, sir, against this aggrandisement of a centralized authority, which, as the experience alike of Greece, Rome, Sumeria, Samarcand and the Sandwich Islands has indisputably proved, tends but to sap the self-reliance of the citizen and to build up an oligarchic bureaucracy."

"Pipe down, Fudge," returned Bloughard: "You're not on the floor, and there are no reporters present. You can get leave to print. This clause deals with an economic necessity, and if we are to maintain our foreign trade supremacy, business must be no longer handicapped by archaic restrictions which were already unfashionable in the ox-team age."

"What has this clause to do with our foreign trade supremacy?" inquired Fudge, still hostile: "It is effective only in the United States, and the insular possessions thereof, including Alaska."

"I am not familiar with the technical data involved," returned Bloughard, "but this repeal is intended simply to legalize the adoption of modern processes in industry, and therefore to contribute to increased opportunities for the employment of American labor, with a standard of living superior to those of any of the other countries of the world which suffer benightedly under inferior administrative and business methods—At any rate, as a personal favor, I ask the inclusion of this repeal clause in the bill."

And so, as I understand it, it was reported out of conference, and the House formally and perfunctorily agreed. I had not, of course, been present at the conference; but that was the substance of the discussion, as I was told of it by the legal department—and the bill had gone to the President for his signature.

I had started down Pennsylvania Avenue, and was making my way with difficulty through the crowd, when a familiar face became visible. The iron-gray hair and shaggy eyebrows of Professor Schnickelfritz topped a sturdy figure, in a shabby overcoat, which was wedging its way in the opposite direction from the Capitol.

"Professor!" I called, "What brings you here?"

"I am on business with the Bureau," he said, "and I go also to the Observatory. And you, Herr Schlicker?"

"For the inauguration," said I, "and a word in your ear. You know what you told me of the Law of Inverse Squares? In another minute, the President will have signed the bill repealing it—and there won't be any such fool law any more!"

THE astonishment on the great scientist's face seemed painful, instead of the rejoicing I had reason to expect. He gripped my arm:

"You lie!" he exclaimed.

"It is true," I answered proudly: "We've fixed all that. In another minute the Law of Inverse Squares will cease to apply in the United States."

"Mein Gott!" exclaimed Schnickelfritz: "Radiation, gravity, the sun! For your lives, stop him!"

He turned as if to dash toward the Capitol and, in that moment, I felt throughout my whole frame that the presidential pen had finished its task. The Law of Inverse Squares had been repealed!

A giant hand seemed to crush down on that milling throng, as the full force of all earthly gravitation was exerted upon them; and, as I fell, I realized that the great dome of the Capitol, too, had fallen to that irresistible force of attraction!

No time to think! It was but an instant later that the greater power of solar gravitation exerted its force. The entire United States, with its insular possessions (including Alaska) had been wrenched from the bosom of puny Mother Earth by the resistless grip of the Sun! And, as the whole solar radiation of light and heat, no longer restricted by the Law of Inverse Squares, burst upon us, the whole heavens became one mass of incalculably-heated yellow flame, into which we plunged, without creating even a ripple, and were there utterly, instantly consumed!

THE END

The Venus Adventure

(*Continued from Page 1373*)

"Where, exactly, are we heading?" he asked in a tone which strove to be normal.

"To the Wots' one town of any size," Knight replied, catching the other's mood. "It's called Ararat."

"More traces of Watson—he was a Biblical old fellow, wasn't he? But I'd gathered that the Wots were more or less nomadic?"

"They are, mostly, but this is a sort of shrine in memory of Watson—their great religious meeting-place. Besides, they had to have some central manufacturing place for weapons and tools. Luckily they've never made more than small arms; it would need more organization and control than they like, to go in for big guns."

Hal broke in. There was a hard edge to his voice.

"Can't you get this damned thing to go any faster?"

"Flat out," replied Knight shortly.

THE field of vision was so limited that they found themselves passing over the outskirts of the Wots' city before they had realized that they were near the end of the journey. Roughly made, single-story huts appeared among the trees, growing more numerous and more closely packed as they advanced. Soon they were looking down on twisting, narrow streets. The city of Ararat had more of the higgledy-piggledy impermanence of a gold-rush town than the solidity of a nation's metropolis. Moreover not a solitary figure was to be seen in any of the roads.

"Where—?" Hal began. Then a look of horror spread over his face.

They had reached an oval arena, packed with thousands of the semi-nude Wots. All were facing the far end, their heads bent down as though in prayer. On a great block, at the far end of the arena, was mounted the gigantic stone figure of a man. He was dressed in the clothes of a fashion long past, and was in the act of raising both hands to heaven, as though invoking.

"So they've made an idol of Watson," Heerdahl murmured.

Hal did not hear. He was gazing at a form standing before the block, dwarfed into insignificance by the huge statue towering above. From a metal collar about her neck, a chain led to a staple set in the stone. She saw the plane as it came, and lifted her arms in an imploring gesture. Simultaneously, the Wots seemed to break the spell which had held them. They flung back their arms, and a volley of stone flew through the air towards the lonely figure.

Knight slowed and banked steeply to bring his machine gun to bear. He could see a second plane, flying low over the crowd. He heard a great cry of "Freda", and saw a man drop from it.

By all rights, Crawshaw should have killed himself in that rash leap, but he did not. He landed sprawling in the space which lay between the crowd and its victim. In a split second he was up and running towards Freda. She sank under the hail of stones as he reached her. Crawshaw was flagging, something inside him had not stood the strain of that jump, but he reached the fallen girl and flung his own body across her as a shield.

Somewhere a rifle cracked. A spray of machine gun bullets answered and, as the other planes came up, each added its stream of lead. The Wots surged first one way and then the other, faltered, and then broke, trampling one another under foot in a wild dash for the safety of the narrow streets. Still the machine guns mercilessly followed them; the Dingtons were out for blood this time.

Knight landed his ornithopter near the towering statue of Watson. Hal walked slowly from it to the two who lay before the stone block.

The others saw him shake his head and then gently lay his coat over the clasped figures. He stood for a moment looking down upon them, before he turned to walk unsteadily back.

"They are both dead and they are both smiling," he said quietly. "I think I should like to die like that."

"Hal," a voice cried. Vida's voice.

Hal opened his mouth, but at first no sound came.

"Where are you, Vida?" he managed at last. His tone was curiously unsteady.

"In a cell under the statue."

It was the work of a few minutes to free Vida and, with her, Lucy. Vida flung herself into her husband's arms and wept uncontrollably with relief.

Temberly bounded from a machine whose wings had scarcely ceased to flap and ran towards Lucy. Her eyes, too, were glistening wetly as they met.

"My dear—your head," she cried.

But Temberly had forgotten the angry red weal across his brow. His heart had been aching more than his head. They forgot too the merciless slaughter of the Wots and their city of fanaticism as the machine guns and the rifles of the Gorlak hordes pressed on to the killing.

"Did you know that stoning was their punishment for blasphemy?" Heerdahl asked.

The other admitted it.

"I was afraid so. The Wots seem to be travelling a reverse path; very soon, they would have been true savages, perhaps below the level of the Gorlaks. We must kill them off now, all of them; else we will never feel safe."

Heerdahl pondered in silence for a while, then:

"It's odd," he said reflectively. "Here are we, reaching out to the stars, while they sink back to the slime. Where does it all lead?"

"We must go to older worlds to discover that."

* * * *

Of the rest you know. Newspapers and films have shown you pictures of the Venusian life. Temberly's book, "The Flora and Fauna of Known Venus", is a best seller. Most of poor Freda's salvaged pictures and notes have been published. Hal and Vida Newton have described both in print, and on the radio, the royal way in which the Dingtons treated their visitors when the *Nazia* was landed near that new and strange Chicago—all this is common knowledge.

My task has been, not to describe Venus, but to tell the story of her discoverers. And though five of those who set out have joined that glorious company of adventurers which has paid with its lives for the conquest of space; yet their memory is no less to be honored than that of the four who returned and the one who remains. On? Yes, Heerdahl is still on Venus, helping Knight to build a second *Nazia*. Any day may see them come, roaring like a man-made meteor, towards the Earth.

THE END

Brood of Helios

(*Continued from Page* 1319)

to the bone. It is not merely for ourselves. I understand, Ruth," he said more gently. "If I am killed it will be all over with you. All over with the human race, perhaps. But back there—" he shook his head. "Your children would grow to be beasts, Ruth—animals. We could not pass on to them what has been lost. We are nothing apart from humanity. It can't be that we're alone! It can't be!" he growled again and looked up as if questioning the sky. "Ruth—we have to go on! Something is driving me on! Like a voice. I hear it!"

The red glow of morning strengthened. Birds sang in the jungle. The woman looked over the plain. The fear in her eyes died.

"You are right, Alan. We must go on. I've been foolish. Wait!" she said seriously as he embraced her. "Do you remember another Ruth, Alan, the Ruth of the Bible, and what she said to her man?"

"Where I go, you will go," the man nodded, holding the supple figure. "They named you rightly, Ruth. I know now," he added decisively. "We can't die. I feel it. We'll find an answer somewhere to this riddle. If we have to walk around this globe. Ruth, we move again, tomorrow—move north!"

CHAPTER VII

On and On

LIKE two ants on the borders of the vast plain, they skirted the jungle. Streams ran toward the north now, sluggishly. The crisis of emotion having passed, the woman no longer told Deneen of her longings for lair, for den, for a place to stay and amass possessions. The calls in her blood were hushed in the rational knowledge of their common purpose. They would find men somewhere. Find the creatures who built the long, silvery ships which shrieked by overhead, almost invisibly high in the sky. And hoping; incessantly traveling across stretches of plain, through jungle and wood; into and out of ravines, they moved over the interminable lands. The stamp of change completed its work.

It was Deneen that the utterly primitive world, no longer strange in vegetation, affected most. Ruth kept the memories of his words in her mind, and fought to remember. He had said her children would be like beasts—he had cried his need to know himself as part of a race of intelligent beings, to achieve to something more than a cooking pot, and a reed sitting mat in the door of a miserable hut. The woman remembered now, while the man forgot.

Necessity, grim and inexorable, bore down upon Alen Deneen. They had survived largely because of the plenitude of game, and the absence of enemies. By the time-harried river beyond the hills to the south, Deneen had learnt, day by day, had adapted himself to the oldest occupation known to life, and the favorable environment had offset his civilized helplessness. The problem of the vine trunks and the cork-fleshed things had been a stimulus to his mind. Not a creature had menaced them after that first terrible day and night when the world about them was incredible and hostile. But on the borders of the plain country, life was harder. It called for muscular iron, for unending alertness. When they left the jungle to strike north, into a land of ravines and gorges and long-exposed stretches of steppe, the game grew grim.

Sometimes, of nights, the songs of a hunting pack went up to the vast moon, and beyond the circle of their fire the eye-lights of wolves stared with cruel glitters. They infested the country like a plague, great, brownish grey killers that stalked the herds of deer and piglike creatures on the plains. As the suns edged to a lower circling, the cork-fleshed things and the rubber-like jungles grew rare. Deneen often sat by the fire, and brooded over the riddle. This was life—life of earth—life that grazed, and ran, that mated, killed and was killed. He saw hares, long-eared bounding hares, antlered beasts in vast herds, and smaller creatures, some irritatingly familiar, that burrowed or ran or flew about the ground and in the air of this world trillions of miles away from the sun that had spawned the protoplasm of earth.

The suns spread apart in the sky. Night shortened, and was gone. They lived for some time in alternate floods of reddish light and a corresponding time under the little blue sun. Then slowly the red orb caught up, appeared in the east before the blue one sank, and they had night again growing. Deneen was more and more convinced of the truth of his theory of their revolving about the red orb while it carried them and the vast moon around the true sun. Ruth listened with rapt attention. The firelight hours were precious to her. Deneen talked more readily at such times, he told her of the meaning of things they saw, rarely of the world they had known. Once he muttered.

"I couldn't stay put. Left school when about twenty to go to Mexico. Alaska—Canada—never a steady idea. Three years later, turning up in Boston, my folks did their best to polish me up, and give me a proper shine. Harvard wasn't curing me any, though. Dad used to smile a bit condescendingly at my picture in the papers. Football was a plebian sport. God! It all seems a dream now—a dream!" He gazed into the fire. The woman looked at him, ragged and brawny and bearded, a wild figure in the flickering light.

"No other man could have done what you have, Alan!" she said with deep feeling. "No other man!"

But mostly their talk was of things of the day. The man's grey eyes grew piercing, hawk-like. His endurance was an iron, unfaltering thing. The first bow was replaced by another, a great rigid frame which Ruth could scarcely bend at all; and there were arrows, three feet long cut out of a fallen tree in a ravine. They were barbed and pointed with bone, and feathered with patient skill around a notched haft; arrows that hummed with deadly accuracy from the string of deer sinew which looped the bow ends. It was a powerful weapon, and when bent to the full strength of Deneen's great arms, drove its bone-barbed missiles clear through the necks of the beasts he hunted. It was a bow, he once said with a ring of pride in his voice, that the archers of old England might have envied.

Slowly, bit by time, they improved their store of goods. The half cocoanut was replaced by a hollow tube of

rawhide circled bark, into which embers were dropped, properly covered with ash, and kept alive for hours. Ruth took care of this important detail, for the dying out of the embers meant hours of sweat for Deneen, though he gradually improved in the art of fire-making, and carried two picked stones at the bottom of his arrow quiver, for the purpose. Clay, found by a stream where they camped for several days, yielded a crude pot, and Ruth grew very skillful in broiling meat by heating stones in the flame and dropping them in the pot, removing the cold ones till the water sang its bubbling, steady song. Deneen shaped arrows. His skin quiver filled.

Their main lack was salt. But once far from the jungle, fruits and tubers growing rare, a straight meat diet kept them in health, and the man's strength grew phenomenal. There was some quality in the atmosphere that keyed up their energies, and steadily, in the teeth of the terrible vastness about them, like defiant notes that would not die, they moved on.

But the world was impassive, and they were human. Deneen changed. Ruth watched him with pain in her eyes. Game grew scarcer, and in the open stretches their simple snares could not serve as they did in the jungle runways. Deneen had to stalk their meat. He grew wilder in appearance, the cloth of his trousers replaced by a strip of wolf skin. A band of the same material crossed his swelling chest, holding the filled arrow-quiver at his back.

In a crude pocket of the lower garment was a priceless treasure—a jacknife with its main blade loosening, and thinned by man whettings on wet stone. His watch had broken long before. Ruth's was still keeping time. She carried the fire tube, the pot, and a worn reed mat. The blue gown had literally fallen from her supple figure—she was skin-clad like the man. Deneen, in his choice of garments, paid tribute to his worst enemies—the great, greyish brown wolves which harried the grass eaters of the steppes. The ravine country was left behind, and plain, rolling plain, streaked with tree-bordered streams, lay over the face of the world.

The rubber vegetation was practically gone. With the dropping of their second calendar stick, as an encumbrance, they lost track of time. But something lived in Deneen, through days and months of silence in the sky. He went north. The rocket ships would pass again.

(*To be continued*)

For the June Issue

in addition to
"THE INVISIBLE CITY"
and
"THE HELL PLANET"
we offer

"THE MESSAGE FROM MARS"

by RALPH JUDSON

Mr. Judson is an English authority on radio, and from his wide knowledge of the possibilities of interplanetary communication, he gives us this exciting tale of two worlds. Our readers have been crying aloud for stories in which creatures from other worlds do not figure as invading, bloodthirsty demons. Here, then is the story they have been waiting for. Our Martians are presented in a new light, and they come upon the scene in time to intervene in an earth catastrophe of the first magnitude. Mr. Judson has kept his science, as well as his story plausible and logical, and he makes of it a mystery tale *par excellence*.

"BROOD OF HELIOS"

by JOHN BERTIN

enters now into some of its most gripping phases in this second installment. We have seen how two civilized beings can suddenly be plunged into an eternal conflict with nature; and be driven almost down to the level of the brute in the bare struggle for existence. Yet the human beings in them will not allow them to rest at that state. There are civilized beings somewhere on the planet . . . perhaps friendly . . . Their two friends must be found . . . the whole absorbing mystery explained; as it will be.

THESE STORIES AND OTHER STORIES
IN THE JUNE WONDER STORIES
ON SALE MAY 1, 1932

What Is Your Science Knowledge?

Test Yourself by this Questionnaire

1. What is the nearest star to the earth? What is its distance from the earth? (Page 1311)
2. What is *Pithecanthropus Erectus?* (Page 1315)
3. How is the presence of helium detected? (Page 1323)
4. What is the history of the discovery of helium? Page 1323)
5. What is the great obstacle to the habitability of Mars? (Page 1357)
6. What is considered to be the state of Venus with regard to life on it? (Page 1357)
7. What is the nature of the three rays emitted by radium? (Page 1324)
8. What is the relation of the Venusian to the earth year? (Page 1366)

Do You Want Science Fiction Movies?

It's up to you, science fiction lovers!

Motion picture compaies are asking this question, too. But despite the success of science fiction in this country, and the rapidly growing reading public, the number of science fiction movies that have appeared in America have been pitifully few.

"Metropolis" and "By Rocket To The Moon" were German films; only "Just Imagine" which was after all a humorous rather than a realistic film, "The Mysterious Island" and one or two others have been filmed in America.

Now comes the Universal films "Frankenstein," which is a huge success and "the Invisible Man" of H. G. Wells; and R-K-O has a film resembling the "Mysterious Island." But these few films are mere crumbs thrown to the hungry lover of science fiction. And even the millions who do not read science fiction, who are lovers of adventure, and exploration in new places and times, are becoming tired of the monotony of sex, gangster and war pictures.

Do You Want Science Fiction Movies?

If you do, you have but to make yourself heard. Many of our readers are writing to film companies to make their desires known. BUT THAT IS NOT ENOUGH! Film companies are guided by the wishes of thousands and tens of thousands, not by a few letters here and there.

Wonder Stories and Wonder Stories Quarterly Will Make Your Demand Count

We are organizing a gigantic petition signed by all those who want science fiction movies and will present this petition to the large motion picture companies. IT IS UP TO YOU as lovers of science fiction to make this a success.

One petition blank from each reader of Wonder Stories will be sufficient to make a powerful appeal to any movie magnate.

Get Five Signatures to This Petition

and return them to us at once. We will gather them together and show the motion picture companies the enormous demand for science fiction movies.

Sign this petition yourself, get four other signatures of your friends and relatives and return them to us. We will do the rest!

If you wish additional petition blanks write to us for them immediately.

EDITOR, WONDER STORIES
98 Park Place,
New York.

We, the undersigned, herewith add our voices to the great demand of lovers of science fiction, for the production of a reasonable number of Science Fiction Movies in America. If such pictures are produced, we will support them loyally and urge our friends to do likewise.

(Name—Please write plainly) (Address)

(Name) (Address)

(Name) (Address)

(Name) (Address)

(Name) (Address)

Science Questions and Answers

This department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical also, to print answers as soon as we receive questions. However, questions of general interest will receive careful attention.

Would He Hear the Explosion?

Editor Science Questions and Answers:

If two airplanes were passing each other, and each travelling about 370 miles an hour and at the moment of passing an explosion occurred on one would the occupants of the other hear it?

Mark Curilovic,
Cleveland, Ohio.

(What our correspondent evidently has in mind is that the relative speed of the two planes is twice 370 miles an hour, or 740 miles an hour approximately the speed of sound in air (1090 feet per second.) He infers that the sound waves emanating from the plane on which the explosion occurred would never reach the other plane since they would be travelling apart as fast as the sound waves travelled, and the waves would never catch up with the other plane.

This conclusion is based upon the belief that a body causing sound waves in the air, gives to those waves its own velocity. Thus in the above case it might be assumed that the plane travelling 370 miles an hour in an easterly direction emitting a sound (speed of sound in air 740 miles an hour) would give to that sound only 740—370 or 370 miles an hour in a westerly direction. Thus the plane travelling west at 370 miles an hour would never hear the explosion.

Present belief on the propagation of sound does not confirm this idea. Sound is transmitted to us by the disturbance set up in the air, and at the moment the sound is emitted the disturbance spreads in every direction at 1090 feet a second or 740 miles an hour. Thus at the instant the explosion occurred in the east bound plane the wave motion set up in the air would travel outward in all directions at 740 miles an hour. That part travelling west would catch up with the westbound plane in ½ second and the occupants would hear the explosion.—*Editor*)

Matter or Electricity

Editor Science Questions and Answers:

1. If a space ship went from one place to another (distance expressed in kilometers) with such an acceleration and deceleration so as to maintain a constant force of one gravity (981 cm. sec$_2$) what formula would give the time employed in the trip?

2. Knowing a planet's density and diameter, how could one obtain its surface gravity?

3. Are the protons and electrons of an atom particles of matter electrically charged or are they simple electrical charges?

A. V. Gutierrez,
126 Hamburgo St.,
Mexico City, Mex.

(1. By a constant force of one gravity, we assume our correspondent means that the space ship maintained gravitation on board equal to one gravity (the gravity at the surface of the earth). Therefore the ship would have to accelerate at the rate of 981 centimeters/second, for half the journey and decelerate at the same rate for the second half. But in order to maintain gravitation during the period of deceleration, the ship would have to be turned end for end.

Let us then divide the trip into the distance d during which the ship is being accelerated and distance D during which it is being decelerated. Since the trip starts with speed 0 and works up to its maximum speed and then decreases to zero at the same rate, the two distances d and D are therefore equal and their sum makes the total distance S.

Now d is equal to ½ at^2 where a is the acceleration given above and time is the time in seconds.

D is equal to ½ at^2 where a is now the deceleration (equal of course to the acceleration).

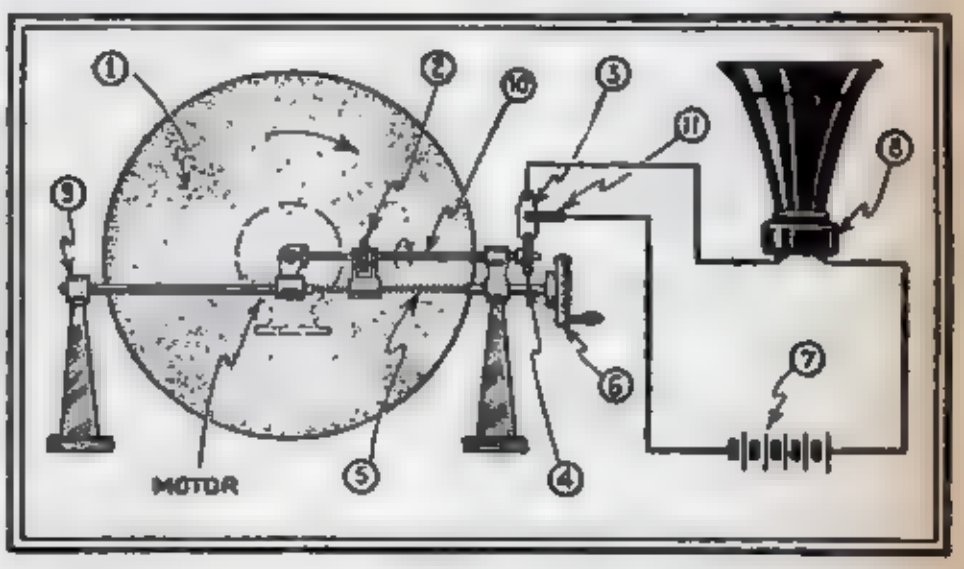
S is equal to ½ at^2 where t is the total time for the trip.

T is equal therefore to $\sqrt{2S/a}$ where S is in centimeters.

2. The answer to this question is given in this Department in the April issue.

3. Physicists are not agreed on the answer to this question. Some believe that matter is at its basis simply electricity and that therefore the protons and electrons are only electrical charges. Others say that they are particles of matter holding electrical charges, and still others say that electrons and protons are wave motions possessing electrical potential.—*Editor*)

A diagram of the "echo" type of sounding device used by the U. S. Navy for both shallow and deep waters. This diagram was furnished by Mr. H. Gale Bradford.



Does Venus Rotate?

Editor Science Questions and Answers:

The moon is supposed to be egg-shaped because it always turns one side toward the earth; the earth is flattened at the poles because of the centrifugal force of rotation at the equator. Could not astronomers find out whether the planet Venus rotates on its axis or turns only one face to the sun, by its shape? If it revolved once on its axis as the earth does, day in 24 hours, it would be like the earth, a sphere slightly flattened at the poles. But if it always has one face to the sun it should be egg-shaped like the moon.

Could you shed some light on this?

George Wood,
London, N. 7, England.

(The prime difficulty in gathering any knowledge about the surface of Venus is the impenetrable cloud layer. That same cloud layer should effectively prevent us from gathering any information such as our correspondent suggests. For example the earth with an equatorial radius of 3963 miles has a polar radius of only 13 miles less. The difference is but ⅓ of one per cent. Now even were the surface of Venus perfectly visible to us, it is quite doubtful if we could detect a difference of ⅓ of one per cent in its size.

Even were there an egg-shaped bulge on the planet, if it turned but one face to the sun, we could hardly detect it through the cloud layers. Other observations on the heat reflected from various parts of the planet during its different phases (with respect to the earth) offer more hope of determining its rotational period.—*Editor*)

Deep Sea Soundings Explained

Editor Science Questions and Answers

In a previous issue of Wonder Stories in the "Questions and Answers Department" you published some data regarding deep-sea soundings. Having spent several years in this branch of the U. S. Navy I thought it might be interesting for your readers to see a diagram and description of the device used by the Navy. The writer has used this device in water as shallow as 7 fathoms and as deep as 3600 fathoms. It has been found to be correct within a few feet.

Disc 1 in the diagram is turned by means of a constant speed motor from the battery supply which in turn causes the small friction wheel 2 to turn, which is keyed to slide on shaft 10 causing wheel 4 to turn. Wheel 4 is fitted with teeth which when turning, forces spring terminal 5 to come in contact with point 11 closing the circuit through battery 7 and causing huge horn 8 in the hull of the ship to send out a signal which is echoed from the bottom of the ocean.

The echo is picked up through a vibration receiver with the aid of a pair of earphones. By turning graduated handwheel 6 the small wheel 2 is made to run nearer to or further from the center of the disc therefore causing small wheel 2 to run faster or slower. When, by turning handwheel 6 the outgoing sound is synchronized with the incoming echo, a reading is taken from handwheel 6 giving the number of seconds it takes the sound to go to the bottom and return. Knowing the speed of sound in water, we know the depth. This device is found by the Navy to be satisfactory to a depth of 5000 fathoms. (A fathom is 6 feet.)

H. Gale Bradford,
Wichita, Kansas.

(We are very grateful to Mr Bradford for the description of this device. This is a case in which the reader turns the tables on the editor, and answers the question instead of asking it. —*Editor*)

Motion Through Recoil

Editor Science Questions and Answers:

You have mentioned in various articles and stories how a man in a space suit in space could fire off a pistol, and by the reaction to the discharge be propelled through space in a direction opposite to that of the discharged shell. Would not the shell having less weight fly off leaving the man in the same position in space?

Eduardo Montjoy,
Newark, N. J.

(*Continued on Page* 1385)

The Reader Speaks

IN this department we shall publish every month your opinions. After all, this is your magazine and it is edited for you. If we fall down on the choice of our stories, or if the editorial board slips up occasionally, it is up to you to voice your opinion. It makes no difference whether your letter is complimentary, critical, or whether it contains a good old-fashioned brick bat. All are equally welcome. All of your letters, as much as space will allow, will be published here for the benefit of all. Due to the large influx of mail, no communications to this department are answered individually unless 10c in stamps to cover time and postage is remitted.

Time Is Non-Existent

Editor, WONDER STORIES:

I've been reading WONDER STORIES ever since 1929, and I would like to say that it is very good, although I would prefer much more interplanetary stories, or else more from Dr. Keller Dr. Breuer, Dr. R. H. Smith, Hamilton, J. W Campbell and Taine.

I would like to add my comments on time traveling, specially related to Mr. Kalotsky's letter.

Mr. Kalotsky says it is a form of energy, and that it becomes a part of space when imagined to be a dimension. I think that is not right, as we do not imagine it to be a physical dimension but rather a theoretical one.

I myself do not consider time as an energy and not even as a dimension, for several obvious reasons. As Mr. Kalotsky says: "it is a form of energy composed of a given number of time-energy quanta, which pass us in a certain time, and so, to travel into the future or past, we have only to increase or decrease the number of time quanta passing us each second."

I find that in so saying "each second" he clearly employs a time term in its own definition, as if not being similar to his time quanta, so contradicting slightly his theory and denoting time as an abstract measure.

Besides, by his theory, it would be physically impossible to catch up with this energy quanta so as to travel in time, because simply these quanta are not going from one place to another in our material Universe, like all other rays. Also, any kind of energy can be screened off, even cosmic rays, while time cannot be screened. And, again, it could be transformed and harnessed, which is not possible with an abstract thing.

Time also is quite non-existing, as in reality we can find out no measurable "present" time. All things have been (maybe a year ago, or maybe a second) or will be, which leaves only the past and the future, even if in practice we find it better to put in their middle a very elastic "present."

I notice this is apt to get a bit long, so I'll just cut off by saying that I simply meant with this to enliven things up a bit on this interesting subject and perhaps to get myself into a good discussion.

Here's hoping for more interplanetary stories and more pictures.

Arnold Vogel Gutiérrez,
Mexico City, D.F., Mexico.

(The discussion on time traveling still holds supreme interest. And our readers will not be satisfied until they can hold time compressed in a box so that they can see it and examine it at their leisure. This is the true scientific spirit.

Time, in the 20th century, is the butt of all jokes. Like the old Ford it has been called everything under the sun. And, as we suspect, before our readers have finished with it, it will have acquired a few more names and meanings.—*Editor*)

Blind to the Future

Editor, WONDER STORIES:

I have been a consistent reader of WONDER STORIES for many years and at this date of writing, although I intend to say good-bye, I will say that I am not sorry for the past.

The reason why I am saying good-bye to your publication may be found in the concluding instalment of Mr. Taine's story, "The Time Stream." I was very much surprised to read his reference to psychology as being a Jewish demon invented by them and applicable to them. I need not speak of the contributions of that great people to civilization, and I feel inadequate to speak for them all, but I refuse to accept the nonsense of an Arabic mathematics, a French chemistry, and so forth.

The disparaging tone in which they are mentioned in this connection, i.e., a Hebrew psychology, clearly illustrates to me that the writer of the stories, the publication sponsoring them, are absolutely blind to the possibilities of the future where not only the brute force of the machine will progress, but the capacity of man to control it and himself by sanity, goodwill and tolerance to each other.

The future for those who see it, will not contain hatred between men of any color or denomination or there will be no such thing as man upon this planet in that future.

Harry Robin,
Bronx, N. Y.

(Irrespective of the rights or wrongs of Mr. Robin's contentions, we want to say a few words about those who refuse to read any publication that publishes a point of view, or anything in fact that is opposed to their own. If everyone did that, no person would read anything but his own opinions rehashed day by day for him, everyone would live in an airtight metal compartment.

We are not concerned so much with whether Mr. Robin reads our magazine again; what concerns us is the attitude that it bespeaks. We have the innocent notion that when people read a publication for many years that it supplies something that they want and when an event such as the present occurs, instead of petulantly saying, "I will never read your publication again," that they will write to us and attempt to show us that the thing we have published is wrong.

Now, as a matter of fact, what Mr. Taine meant when he spoke of "Hebrew psychology" was not all psychology, but the "psychology of the unconscious" elaborated by Freud, Jung, Adler and others. It was a specific reference in Mr. Taine's story to the psychology of the unconscious that is the point at issue.

Now, we are not in agreement with Mr. Taine if he attempts to be disparaging of the psychological principles elaborated by Freud and developed by Jung, Adler and many others. We believe that Freud is one of the few great contributors to psychology and that the study of the "unconscious" or "subconscious" as it has been called has done much to advance the study of the human mind.

We believe that Mr Taine meant no disparagement to Hebrews. If we had believed that we would not have published his story. We believe he aimed his shaft at the charlatans of psychology who use the terminology of Freud to gather fat fees for themselves as "experts." Every new science has these charlatans, and psychology has had its share.

We cannot force Mr. Robin or anyone else to continuing reading our publication. But we can ask them whether they are acting wisely to threaten to cease reading it everytime some unpleasant point of view is advanced.—*Editor*)

ON LETTERS

BECAUSE of the large number of letters we receive, we find it physically impossible to print them all in full. May we request our correspondents, therefore, to make their letters as brief and to the point as they can; as this will aid in their selection for publication? Whenever possible, we will print the letter in full; but in some cases, where lack of space prohibits publishing the complete letter, we will give a resume of it in a single paragraph.

Might Makes Right

Editor, WONDER STORIES:

As a comment on Edmond Hamilton's "Conquest of Two Worlds," I believe Mark Halkett was both right and wrong.

Right, because he sympathized with the meek, innocent Jovians and sought to prevent their wanton slaughter. To him, war was hell—something that caused only suffering and regret.

Wrong, because in renegading, he pitted himself—a single intellect—against the mighty hordes of earth. His cause was doomed from the start. Then—he turned traitor to his own race, his life time friends. That, in itself is a moral and military offense—punishable by death.

Conquests have been since time began—as they will always be. Might makes right—never the reverse. Halkett died a martyr to a noble and worthy cause, but it was a futile sacrifice.

Frank R. Moore,
Detroit, Mich.

(Many will disagree with Mr. Moore's statement that "might makes right." Some people fondly believe that if "might does make right" that it is only for a time. Then the forces of right become mighty in defense of right, and eventually right becomes might. However we invite our readers to give us their own feelings on the matter.—*Editor*)

The Anchor of Sanity

Editor, WONDER STORIES:

A year ago I started reading science fiction magazines, and the fact that I am contributing a letter to your magazine proves that I still buy WONDER STORIES and intend to as long as its high standard is maintained.

But let me get straight down to the object of this letter, which incidently is for Mr. Abbey A. Schwartz who accuses readers of WONDER STORIES as *wide-mouthed*—not *wide-awake* youths. Being a reader, I take it as a personal insult. The editor as usual was far too courteous in his reply, and I think it only fair that a reader of the stories he scoffs should be allowed to strike back.

Dear Mr. Schwartz, your claim to be a writer is ludicrous if you downcry science fiction as given in WONDER STORIES or elsewhere. Science fiction is the purest form of creative imagination in the world, and no would-be writer of such stories could resort to the supernatural or black magic theme to gain patrons; it wouldn't wash among modern youths whose education is on the highest plane of culture since the beginning of civilization. No, sir! you've got to give us

(Continued on page 1386)

Something New!

Wine-Dipped Cigars

THE CIGAR WITH THE "FORBIDDEN" TASTE

The late Vice-President Marshall was right! What this country needs is a good nickel cigar; and if you once smoke our VINOS MERCADO you will never smoke any other cigar. Not only the best of leaf tobacco is used in the making of our VINOS, but they are dipped in sweet wine—which imparts to them a subtle and quite distinct taste and flavor. No—you won't get intoxicated smoking our VINOS, but they will make you "feel good". We guarantee that! And that's not all! VINOS are twisted, giving the cigar a quaint, elegant look. VINOS are manufactured in one shape only—5½ inches, twisted, wine dipped and cellophane wrapped.

Do not send any money. We will mail you the cigars and you pay the postman the price indicated below plus a few cents for postage.

Box of 50 Vinos Mercado **$2.65**

Box of 100 Vinos Mercado **$5.00**

SMOKE ONE FREE!

Just to show you that we believe in what we preach, we will let you be the judge. Order a box (smoke one of two VINOS and if you don't feel that it is the best cigar you have ever smoked, return the unsmoked cigars and we will refund your money.

Vinos can be bought only from the manufacturers. They are not for sale in any store or at cigar counters.

Mail Coupon Today!

VINOS MERCADO CIGARS
245 Greenwich St. New York, N. Y.

Please send me:
( ) Box of 50 $2.65
( ) Box of 100 $5.00

I will pay postman the above amount plus the few cents postage.

Name .....

Address .....

City and State S-5

SCIENCE QUESTIONS AND ANSWERS

(*Continued from page 1383*)

(The use of the pistol in space to propel a man is no different than that of a rocket to propel a ship. In each case use is made of the equivalence of action and reaction. The law states that in such an action as the firing of the pistol the momentum imparted to the shell is the same as that imparted to the man. Now momentum is equal to mass times velocity. Since the mass of the man is hundreds of times greater than that of the bullet, the velocity given to the man by firing the gun will be only a small fraction of that given to the shell.

Thus if the shell has a mass of one ounce and the man 150 pounds (2400 times that of the shell) and the shell is given a velocity of 2400 feet per second, then the man will be given a velocity of 1/2400x2400 or 1 foot per second. This velocity is doubtlessly small, but it still exists.

If a man stood on smooth ice and fired off a large calibre pistol he would receive a perceptible backward impulse.

Thus the Springfield rifle styles 1906 fired a shell weighing 165 grains or .0236 pounds; and its muzzle velocity was 2670 feet per second.

If a man weighed 150 pounds then the equation for the velocity imparted to him would be .0235 x 2670 equals 150 x v.

v, the velocity of the man, would be .42 feet per second. Disregarding air resistance, our man on ice, if he fired six shells from the rifle, would be sent backward at 6 x .42 or 2.52 feet per second.—*Editor*)

THE READER SPEAKS

(*Continued from page 1384*)

plausible "food-for-thought" stories.

I am a writer too, and out of all the chaos of humanity I see in scientific achievement the greatest source of inspiration; the mightiest theme for exercising imagination, based on the foundation of unbiased logical reasoning. Why! even a look at the stars in the sky at night gives me inspiration, and as I endeavor to fathom the outer depths of space, I find myself shrinking, and realising that there must be in this mighty universe happenings which go beyond our wildest conception, and I am not so feeble as to think that we humans are the only form of life in this infinite universe.

You will never be a writer of fiction or anything else if you kill your mind to the greatest mystery of space, and its millions upon millions of stars, nebulæ, and the secret of matter down to the basic atom, or even lower. Scientific curiosity makes writers and readers. Science is the anchor of "sanity" and anything else you substitute for your source of inspiration will be an anchor sunk in the quicksands of an illusionary conception.

"The Time Stream" by John Taine alone places WONDER STORIES in a high class, and I ask you Mr. Schwartz to be just in your answer to this: Could the reader you depict, who is confronted with this marvelous piece of imagination—read it? And could you wield your pen so masterfully?

An author who gets his work published in WONDER STORIES can well be proud. I do a lot of writing, and I intend to make a determined effort to get a story in WONDER STORIES. It will be a standard upon which I can measure all my future literary attempts. I shall be proud of it.

Mr. Schwartz please reconsider your statements, and if you must criticise, try and tear the feasibility of any of the stories published to pieces. I don't think that you could do it more than five out of the hundred.

Gerald Evans,
Swansea, South Wales,
Great Britain.

(Well, the readers are rallying from all parts of the world now, in defense of the accusation made by Mr. Schwartz against their intelligence. We should have warned Mr. Schwartz that he was getting into hot water. Perhaps he will some day wish to retract his statement.—*Editor*)

(*Continued on page 1386*)

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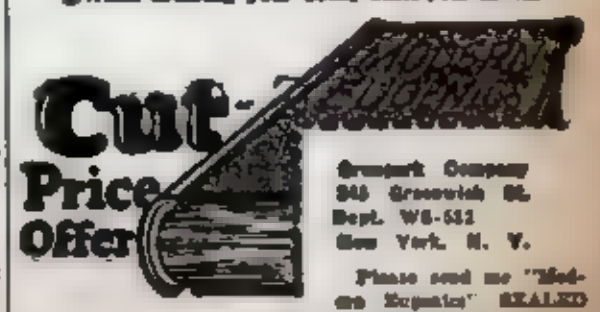

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THE READER SPEAKS

(Continued from page 1385)

The Time Projector

Editor, WONDER STORIES.

I am a New Zealander, a great reader of your famous magazine, and am very keenly interested in science. Although I am only fourteen years old, and my knowledge of science is very small, I would like to know the answer to certain questions that have been puzzling me.

Several months ago you published a story, "The Time Projector" by David Lasser and David H. Keller, M.D. The inventor of the projector was able to see into the future. The scenes he saw were quite terrible and so he determined to teach men to be very careful and avert catastrophes. How could he possibly change the destinies of man, when the projector showed the inevitable? And also how could a man project himself and a whole army back into time to conquer the whole world, thus changing the history of today?

If it were possible for one to travel in time, he would not be seen, or his presence felt, just as if he were a spirit. Would you kindly shed some light on this?

Desmond Elwood.
Auckland, New Zealand.

(In the "Time Projector" the authors expressly stated that the machine showed the future, as it was being made *by all of the forces then in existence.* In other words, if the "Time Projector" had not interfered, the events would have occurred as the machine predicted them. But by the very projection of the events, and allowing people to see them, a new force was introduced—the knowledge of the events. Therefore in order to see what the effect of this knowledge would have been on the projected events, the inventor would have had to set the machine in operation again, and again see what the future was.

Perhaps, wisely, he decided not to let people know what the new projection was. For he had done all that was humanly possible—to warn the world. If human nature was such that the warning of a catastrophe would not be sufficient to set in motion forces to oppose it, then it was futile to do more. As Henry Booth said to the world, "You shall know the truth and the truth will set you free."—*Editor*)

The Depression on Mars

Editor, WONDER STORIES:

A gong sounded. Into the dark chamber drifted twelve whispering, radiating globes, their questing thoughts probing every motion, every microscopic action of the vast Arena of Authors. Now they hovered motionless over the illuminated stage, alert, searching. In her tense excitement tears rolled down the cheeks of Greta Garbo.

An abrupt pause, holding the very breath of the universe, ensued. Words leaped from the mouth of the staid old judge—the momentous question. Blue streaks shot suddenly through the globes as a terrific volume of thunder broke down from the darkened skies.

"Well, members of the jury!" solemnly queried the judge, a twelve-foot robot, "Have you yet arrived at a decision?"

"We have, your honor!" From every globe stationed just over the incandescent stage darted bright red rays of information. There was a sudden commotion in the amphitheatre, a whispering within the sea of authors, among whose serious faces shone those of Merritt and Williamson and Taine. "Lo—our decision is this! We hereby declare that for ingenuity in plot conception, for smoothness of style and description, beyond all other authors F. Schuyler Miller reigns supreme."

Stupendous flames of light, followed by a terrific crashing, roared through the immeasurable arena, lit now by the last rays of a dying sun. In stupefied silence the authors of WONDER STORIES rushed to their writing chambers, working desperately to produce fiction surpassing Miller's.

As I, Bernard J. Keaton, record the above trial which actually transpired in my imagination, there comes a *planetogram* from the planet Mars. Eagerly I slit the reinforced seal, to find myself staring into a message written by my old friend and advisor, a master-mind among

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THE READER SPEAKS

scientists, Ras Thavas of Barsoom. Briefly, I quote its message:

"Decision of 12 globes affirmed. P. Schuyler Miller undoubtedly best author in WONDER STORIES. 'Tetrahedra of Space' unequalled in my reading career of eight hundred years. Give regards to Miller. Predict terrific struggle for supremacy between Miller, Merritt, Smith, and Williamson. Excepting Merritt, however, place my bets on Miller, ten to nine. Saw Black Lem Gulliver on Ceres, looks fine, but his one arm serious handicap. Have decided to graft him another arm. I'll have to use different kinds of water glass. Depression terrible on Mars."

Now that from every point in the universe a verdict has been given to decide the most popular author, it rests with me to cast my vote for P. Schuyler Miller. This decision, it would be advisable to suggest, was acquired only after sedulous and serious consideration. While it is indeed true that Merritt, with his descriptions in "The Moon Pool" had overshadowed Miller somewhat in scientific concept, nevertheless advancing years will bestow upon Miller an unparalelled intellect.

After writing "The Tower of Evil" Schachner and Zagat settled down to become excellent hack writers. And after all, Williamson is a shadow, a double of Merritt, presenting the form but not the substance, striving but never succeeding to arrive at original conceptions of thought and style. Those literary bunglers who call themselves writers, such as Repp, Fulcher, Barnes, and Black, Flagg, Sharp, Long, have disgraced the writing profession. Out of the muck and slime, out of the idiotic ramblings of the others P. Schuyler Miller looms like a skyscraper among hovels, steadfastly maintaining a level of science fiction which can be compared with the best that America has ever produced.

Cheer up, Merritt and Williamson. And you, Clark Ashton Smith, deserve something more than a medal for your "City of Singing Flame" and its sequel. Flaming chariots ride toward their doom when P. Schuyler Miller, A. Merritt, Clark Ashton Smith and Jack Williamson appear in a single issue of WONDER STORIES. But in that long race toward the apex of achievement, where at the present time only four men stand awaiting the laurels of a scientific universe, giants of the imagination with brains so mighty the average man is a pygmy; in that staggering battle for superiority, how I wish I were there! (From the outside looking in!)

Bernard J. Kenton,
Cleveland, Ohio

(Mr. Kenton has chosen his Olympian Gods, with P. Schuyler Miller as Zeus. Do our other readers agree; or do you propose any other circle of the Gods? Is Ras Thavas of Barsoom right about his judgment of authors, or has the "depression on Mars" warped his judgment? We would like some light on this question from other Homers.—*Editor*)

Like a College Professor

Editor, WONDER STORIES:

It's your own fault—you asked for it. You asked Mr. Abbey A. Schwartz to speak and how he spoke! You see, he has grown up, thank you, and judging from his letter in "The Reader Speaks", regards WONDER STORIES somewhat like a college English professor regards dime novels. Since Mr. Schwartz is now undoubtedly due for a lot of panning from the WONDER STORIES rank and file, please allow me to get a word in edgewise in defense of his candid stand.

Scientific fiction is a field of literature more completely adapted for stories of utmost daring and interest than is any other. The trouble seems to be that the writers producing this type of work seldom approach the heights capable of attainment. A gem here and there among the trash is all that makes WONDER STORIES worth reading.

A story may easily be the product of thought, intelligence, and imagination, and yet not be interesting except in the wild west fashion that appeals so to juveniles. After all, the STORY, not the SUBJECT, is the important thing, and it

(*Continued on page* 1388)

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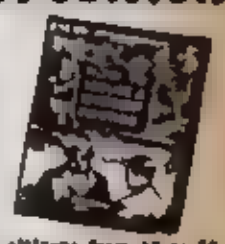

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THE READER SPEAKS

(*Continued from page 1387*)

takes a really gifted author to produce a good story.

How well I remember the first "wonder" story I ever read: "The Airlords of Han." What a delicious new thrill I got! Not realizing that this story was an extraordinary one I was sadly disappointed with the greatly ballyhooed stories in subsequent issues of science magazines. I am sick and tired of threadbare plots; mechanical, inhuman characters; unlikely situations; and entirely unplausible action. I am constantly hunting for stories that contain none of these undesirable characteristics, and if game gets too scarce I will join Mr. Schwartz in disgusted retirement.

Harry P. Pancoast,
Wilmington, Del.

(We have known of a great many college professors who read dime novels for relaxation; and at least three presidents of the United States have confessed to a low-brow taste for detective stories. However, that's neither here nor there.

We do not blame Mr. Pancoast, Mr Schwartz or any other person for going "into disgusted retirement" if they feel that the standard of stories is below par. We realize that readers do not want fantasy, and for that reason we have been insisting on more plausibility in the stories we accept. We have repeatedly said that science fiction should not be "wild west' stories of the future; and we have no intention of making WONDER STORIES a magazine carrying such stories. However, we invite Mr. Pancoast to give us a more detailed criticism of the stories from the point of view of a detached reader.—*Editor*)

Fans Who Profess Loyalty

Editor, WONDER STORIES

I am caught in the movement for more science fiction movies, so please send me some petition blanks. From your replies to readers' letters you evidently are not satisfied with the number of petitions sent in. If the science fiction fans who profess loyalty do not help to put this over, we shall have to be content with the cheap grade of pictures which are now thrown to the movie public. *So let's get behind this movement and put it across with a bang!*

Here is a list of stories appearing in WONDER STORIES which I would like to see filmed: "In 20,000 A.D." and its sequel, "Dust of Destruction"; "An Adventure in Futurity"; "Utopia Island"; "The Time Projector"; "Exiles of the Moon" and "The Time Stream." The first mentioned is my first choice.

I prefer stories about unique scientific ideas the best, but I believe the success of any type of story depends on the way it is handled by the author.

Edward F. Gervais,
Lansing, Michigan.

(Mr. Gervais appeals to the loyalty of our readers to support the science fiction movie petition to the full extent of their ability. Some of our readers have secured from 50 to 100 signers to the petition but thousands of our readers have not yet responded. To them we address this last call for soon we are going to approach the motion picture companies, and the impression that we make upon them will depend upon the great demand that we can present

You readers who have not yet filled out your blanks, join with us!—Editor)

Remains Sane and Human

Editor, WONDER STORIES:

Although WONDER STORIES is very interesting, lately the stories have been lacking in something which I could not define. But the February issue gave me the idea. It was after reading the story of Edmond Hamilton's, "A Conquest of Two Worlds" that I found out what it was.

To me, Hamilton's story was the most extraordinary you have ever published. First, because there was not the "professor's daughter"; second because even the most unscientifically inclined reader could understand it perfectly, and third, because Mr. Hamilton is a writer who even in a fiction story remains sane and human

His hero Halkett is my idea of a solar explorer and adventurer. We can't call our-

THE READER SPEAKS

selves human and not as wild beasts. Hamilton's story is a vivid picture of the future, if we stay on the level of this so-called civilization. I was a soldier and I know what war is like. The danger to humanity is not one from outer space but is within us. Our civilization, if we may call it that, won't be destroyed by any except ourselves.

I have noticed in war that the more educated a man was the worse he acted. So it seems to me that our education must be wrong.

Carl Lipensky,
Chicago, Ill.

(Perhaps Mr. Lipensky is right in his statement that our education is wrong. However, we have an idea that the trouble is that for once the politicians who control our affairs are much behind and have not yet caught up with the ideas of the people they govern. For once, the populace is more enlightened, more sane and understanding than those who govern them.—*Editor*)

Discerning Right From Wrong

Editor, WONDER STORIES

I wish to express my satisfaction as to the purpose of your authors in writing the Lem Gulliver series. I was under the impression that you were unaware of the apparently inexplicable triumph of Lem over his nemesis, the police. I am afraid it was not very complimentary of me to think that you were so dumb. Please accept my apologies.

But an erroneous impression seems to have been made about my criticism. I wish to go on record and repeat what I said about that story. I have written to many of my friends claiming the Lem Gulliver stories as excellent. Now it appears that my letter in the March issue creates an opposite impression. I did not say anything about my likes or dislikes of the story itself. If the letter is read carefully, this will become apparent. All I objected to was the idea of wrong triumphing repeatedly over right. You will be surprised to learn how many children read your stories. The imagination of the modern youngster is greater than that of his grandfathers' ever was. But the youngsters' imagination has not progressed to the point where they can discern right from wrong in all its finesse. To see wrong always victorious implants doubts in these young minds.

And so, I am glad that you made it clear in your footnote that Lem Gulliver would eventually be either punished or justified. Naturally we all hope for the latter as the authors have forced us to form an intense liking for this romantic space rover, with consummate skill. When we glance at the names of the authors, this consummate skill deteriorates in our minds and becomes commonplace. Such skill is to be expected from such authors as Miller and McDermott. At any rate, we hope that Lem Gulliver has a long life.

I hope this explanation clears up my apparent inconsistency with my friends.

Raymond A. Palmer,
Milwaukee, Wis.

(We are happy to print this letter from Mr. Palmer clearing up his attitude toward Lem Gulliver. We are glad also that he understands that we do not present Gulliver as an example of a man who can defeat the law and get away with it. No one realizes more than Gulliver that such is impossible.—*Editor*)

A Minimum of the Unknown

Editor, WONDER STORIES:

In reading your March issue I find a story therein that deserves mention not only from a literary standpoint but also because it is a departure from the wildly hypothetical plot usually found in your stories. The story I refer to is "Red April, 1965" by Frank K. Kelly. Mr. Kelly has wisely refrained from introducing highly theoretical mathematics and physics. Instead he has given us a reasonable plot with a minimum of the "mysterious unknown."

I believe you will make a distinct improvement in your magazine if you will include a few more stories written as Mr. Kelly's is written and refrain from trying to impress the simple reader with theories of the nature of time and space. In short let's have more attention to plausibility, clearness and general literary merit instead of stock "hokum" that most writers seem to depend on.

Mr. Kelly has written a story that moves swiftly, is interesting and does not insult the intelligence of the reader. I feel that there are many readers who also feel that it is time we had more logical stories such as Mr. Kelly's.

Jack H. Hill, Kansas City, Mo

(It is quite a difficult matter, as Mr. Hill will appreciate, to orient stories that people of all possible states of scientific education and appreciation will like. We have among our readers men who are highly-educated scientists, and others who know absolutely nothing about science, but who are eager to learn. We must satisfy all groups and this we are attempting to do. But we are frail, limited human beings and we do occasionally err, as many brick-bats will testify. But if our readers will write us frankly, as Mr. Hill does, we can gradually approximate that beautiful state in which each reader will obtain something of value, as well as enjoyment from our stories.—*Editor*)

His Eyes Were Not Dry

Editor, WONDER STORIES

I read in the April issue the comment of Mr. Djano Smirne of Philadelphia, regarding war stories. He states, that among others "The Final War" is absolute trash; besides, those of us who happen to like war stories are imbeciles.

All right, let that pass by. I rather believe that Mr. Smirne has all the right in the world to say things as he sees fit. So do I, and I congratulate you, Mr. Editor, on your remark that this story should be sent to every commander in the world as a warning. As a matter of fact, I read your comment before reading the second installment of "The Final War," as both the installment and Mr. Smirne's letter are printed in the April issue. I agreed with you immediately, and how do you think I felt when I finished reading it?

I frankly confess that my eyes were not altogether dry. I am not bloodthirsty, on the contrary, I am a peaceful citizen incapable of killing a fly; nevertheless, I enjoy war stories, some of them immensely, when like "The Final War" they carry along a profound and intelligent warning, besides being as a whole, a clear and well-developed narrative, inspired in the terrible experiences that the author, no doubt, has endured. I would talk like that for hours, Mr Editor, for the way I feel about it, but as this is no business for you, I will only say that the day will come when the Governments of all nations of earth will react to these horrors and then unification of ideals, progress and brotherhood will bring about the ever hoped for: happiness for mankind.

I have been reading your mags for two years regularly; "The Reader's Column" is a place of good entertainment, instructive, and thought-provoking. I laugh heartily when passing over funny comments of readers and at times I swear bitterly in striking trash. But, well, we can't help it, hearts and brains are of great variety.

Your stories in general are good, once in a while you let trash pass, but your job is not an enjoyable one. There are stories, on the other hand, that more than repay for our time and money; and as to the knowledge we gather from most of them, Mr. Editor, pass me your bill separately

If this letter deserves publication, kindly make the necessary corrections, as I am not an American but Spanish. I am afraid there is a lot to fix. Thanks.

Eduardo Galindo, Negales, Ariz.

(We are particularly glad to get Mr. Galindo's letter and to have him tell us that his eyes were hardly dry on finishing "The Final War." Since the editors had the same experience, we wondered whether we were not easily influenced, or whether the occasion for wet eyes was not in the story itself

The comments on "The Final War" were uniformly favorable; and we are going to try to get Mr. Spohr to tell us how civilization was reconstructed.—*Editor*)

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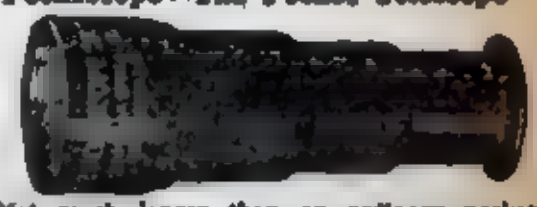

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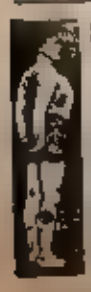

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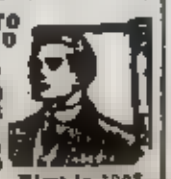

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Be sure to read the announcement of the SCIENCE FICTION SERIES on Page 1300 of this issue —

THE READER SPEAKS

(*Continued from page 1389*)

Not Absolutely

Editor, WONDER STORIES:

I am writing to uphold in part the statement of Mr. Schwartz. I am a college student with a Bachelor of Arts degree in Mathematics and I am working on a Master of Science in Physics. I had never read a copy of WONDER STORIES until last summer when I read a story called, "Submicroscopia" I think the name was. Since then I suppose I have read about two-thirds of the copies published.

As far as any literary or scientific value is concerned, I cannot see that WONDER STORIES is a good example. As for the use of the King's English as employed by some of the authors—well I have seen my roommate, an honor student in English literature, just tear his hair.

I do not think Mr. Schwartz was absolutely correct in saying that the readers were below average in intellectual capacity. But I do think that one's imagination would have to be stretched somewhat badly if he got any scientific data of value from a science fiction story.

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WONDER STORIES QUARTERLY

Table of Contents

THE VANGUARD TO NEPTUNE
By J. M. Walsh
Four races clashed on mysterious Neptune, to settle the planet's fate . . . .

REBELS OF THE MOON
By Manley Wade Wellman and Max Jergovic
Based on the Fifth Prize Winning Plot of the Interplanetary Plot Contest . . . .

THE WOMAN FROM SPACE
By Richard Vaughan
Into the heart of the world they burrowed, to make a passageway through space . . .

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By Clifford D. Simak
Defying the religious fanaticism of another race, the Terrestrials invade the Temple's sanctity . . . .

RED SLAG OF MARS
By Jack Williamson and Laurence Schwartzman
Based on the Sixth Prize Winning Plot of the Interplanetary Plot Contest . . . .

THE STERILE WORLD
By Warren E. Sanders
Sterile, the human race faced certain extinction . . . . slowly . . . . inevitably . . . .

I admit that I have found a story in WONDER STORIES relaxing after a hard period with mathematical and physical formulas. However if I were some of the readers I wouldn't take WONDER STORIES so seriously. Hoping to be further amused by next month's crop of indignant readers of Mr. Schwartz' "brick bat."

Hugh White, Parkville, Mo.

(Mr. White provides a soothing balm both for those who agree and disagree with Mr. Schwartz' estimate of our readers. However, as they say, Mr. White "damns our readers with faint praise" when he says, "I don't think Mr Schwartz was absolutely correct in saying that the readers were below average in intellectual capacity."

Our experience is that our readers are considerably above average; and that is especially true of our younger readers who often amaze us by their pointed understanding, and shrewd comments on scientific questions. As for the rest, well that's in the hands of the Gods.—*Editor*)

BOOK REVIEWS.

STARS AND PLANETS by Donald H. Menzel, Ph.D. 120 pages, stiff paper covers, illustrated. Size 6x9. Published by The University Society, Inc., New York.

This slender but excellent volume is Dr. Menzel's contribution to the University Series of books on "Highlights of Modern Knowledge." Dr. Menzel is well known as an astronomer and

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This book is one of forty books that will ultimately be assembled by the University Society, Inc. covering all fields of human knowledge, the books to be sold by subscription.

FLYING AND HOW TO DO IT by Assen Jordanoff, 113 pages, stiff cloth covers, illustrated. Size 7¼x9¾. Published by Grosset and Dunlap, New York. Price $1.00.

This volume attempts a new psychological trick in the explaining of the principles of operation and control of the airplane. The author uses numerous illustrations showing a plane in every possible position and state of stability and instability, and by pointing out the humorous angles of some of the situations in which the novice flyer finds himself, the point at question is driven home the more forcibly. Mr. Jordanoff is advertised as a man who knows aviation from every angle—of peace and war; and in language as simple as language can be made, he examines his experience to find what lessons can make flying safer for the fledgling.

WINGS OF TOMORROW by Juan de la Cierva and Don Rose. 284 pages, stiff cloth covers, illustrated. Size 5½x8¼. Published by Brewer, Warren and Putnam, New York. Price $2.50.

Now Senor Cierva, inventor of the now famous autogyro, tells of its history, its development and its future. The still youthful genius of aviation, who built his first original-design airplane while still in his teens, conceived of the autogyro from his wide theoretical knowledge of aerodynamics. As a result of these youthful researches we have a plane that today can admittedly rise and descend in spaces considerably smaller than those necessary for other forms of aircraft.

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THE GREAT PACIFIC WAR by Hector Bywater, 321 pages, stiff cloth covers, size 5½x8¼. Published by Houghton Mifflin Company, New York. Price $2.50.

This volume of an imaginary war between Japan and the United States, published first in 1925, is reissued now, due to the great public interest in the Far Eastern hostilities. It details a day-by-day account of the beginning of the war, its strategy and the final culmination of the conflict between two mighty naval powers.

Since the fictional facts beginning in 1929 leading to the outbreak of hostilities in 1931, have now been superseded by actual occurrences for that period, it is a pity that the first part of the book could not have been rewritten. But as it is, the book is written from the point of view of an historical and political observer and military strategist, and to one interested in wars from that standpoint the book is quite interesting.

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